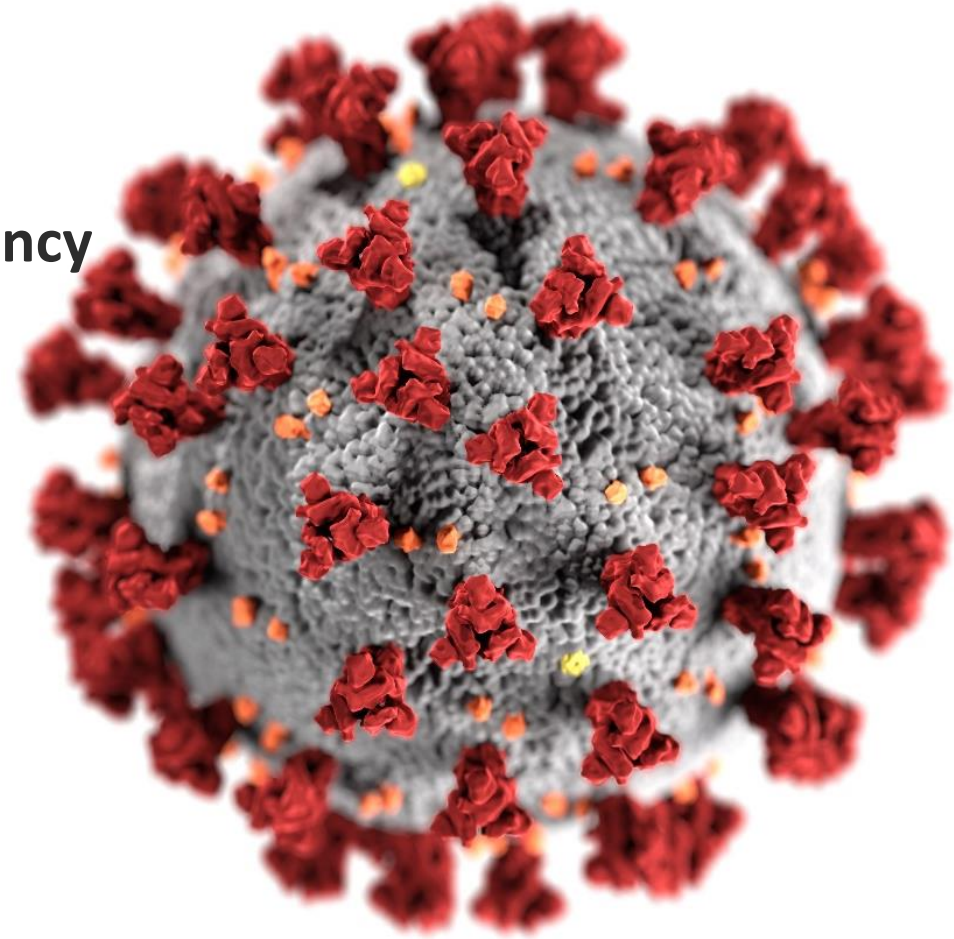
One Health Partners Monthly COVID-19 Webinar

Coordinated by the CDC One Health Office,

in partnership with the One Health Federal Interagency COVID-19 Coordination (OH-FICC) Group



OneHealth@cdc.gov

April 20, 2021

cdc.gov/coronavirus

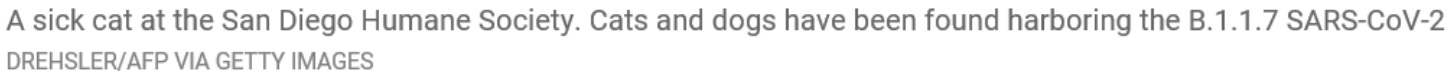
One Health Partners Monthly COVID-19 Webinar

Purpose:

- Share news and key updates, guidance, and resources on One Health aspects of COVID-19
- Summarize animal cases of SARS-CoV-2 infection in US and globally
- Provide updates on ongoing coordination around One Health aspects of COVID-19 in US

One Health Partner Collaborations During COVID-19 Response

One Health and COVID-19 in the News



A sick cat at the San Diego Humane Society. Cats and dogs have been found harboring the B.1.1.7 SARS-CoV-2
DREHSLER/AFP VIA GETTY IMAGES

Major coronavirus variant found in pets for first time

By David Grimm | Mar. 19, 2021 , 4:10 PM

Covid: Will your pet need a coronavirus vaccine?

CORONAVIRUS | Mar 26, 2021, 10:16am EST

From Cats And Dogs To Minks And Mice, Covid-19 Variants Are Infecting The Ecosystem

PUBLISHED APRIL 5, 2021 IN WORKING@DUKE

PETS KEEP US PAWS-ITIVE DURING THE PANDEMIC

Scientists Scanning Household Pets for COVID-19

Jan 26, 2021, 12:59pm EST

Covid Killed A Tiger. Are Your House Cats At Risk?

ANIMALS | WILDLIFE WATCH

What the mink COVID-19 outbreaks taught us about pandemics

Pollution fears over mink buried after Covid culling in Denmark

Furry friends help Germans ease Covid-19 pandemic blues

Signs of pollution detected at burial sites but no water contamination, says environmental agency

- Coronavirus - latest updates
- See all our coronavirus coverage

Total US COVID-19 Human Cases by State/Territory

as of April 19, 2021

TOTAL CASES

31,484,148

+46,032 New Cases

CASES PER 100,000 PEOPLE

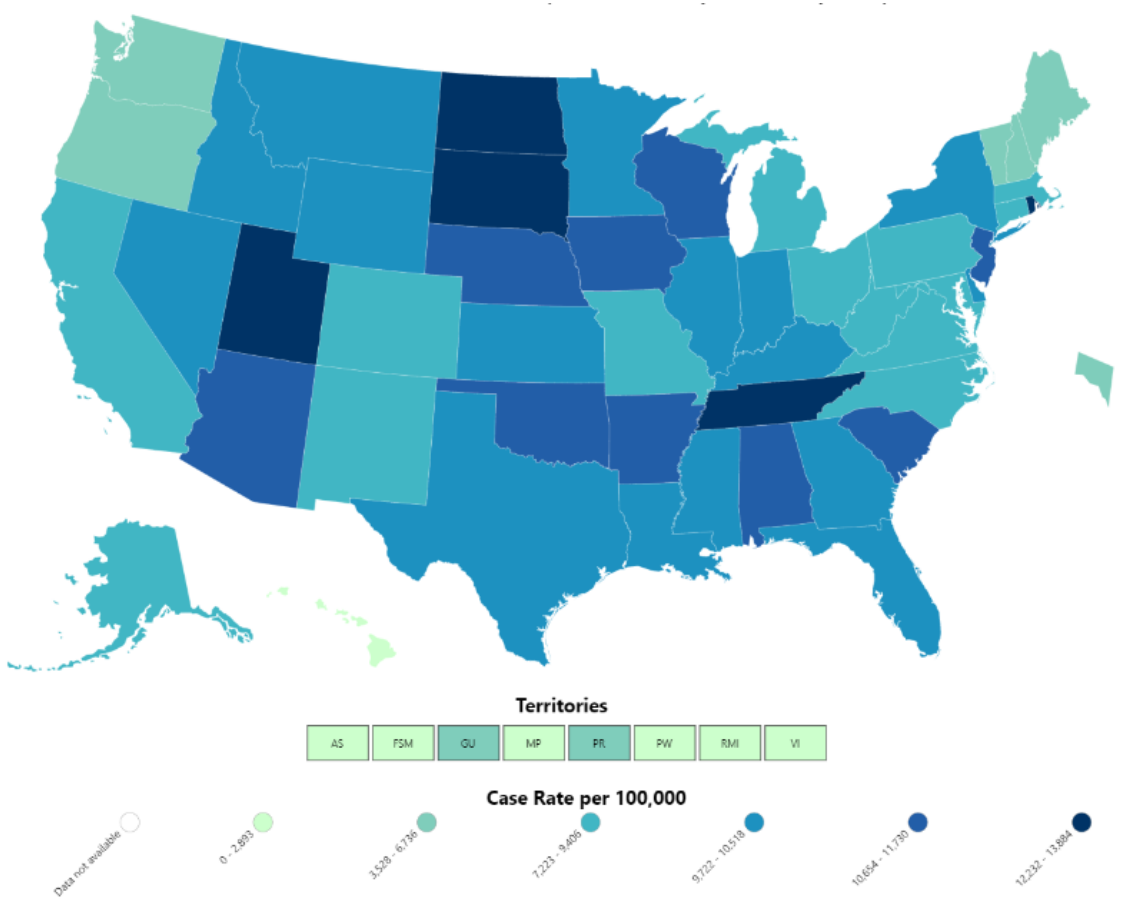
9,483

TOTAL DEATHS

564,292

+355 New Deaths

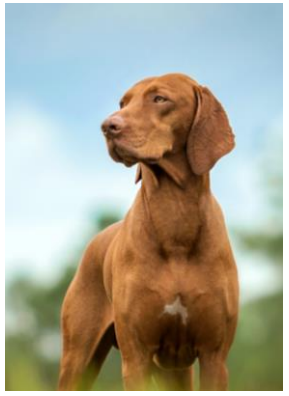
COVID-19 Case Rate in the US Reported to the CDC, by State/Territory (cases per 100,000)



Data as of April 19, 2021 CDC COVID Data Tracker

Animal Species Naturally Infected with SARS-CoV-2 Globally

- Cats
- Dogs
- Tigers
- Lions
- Snow leopards
- Gorillas
- Wild caught mink
- Puma
- Pet Ferret
- Farmed mink






Data as of April 14, 2021: OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

Animals Positive for SARS-CoV-2: Globally by Species

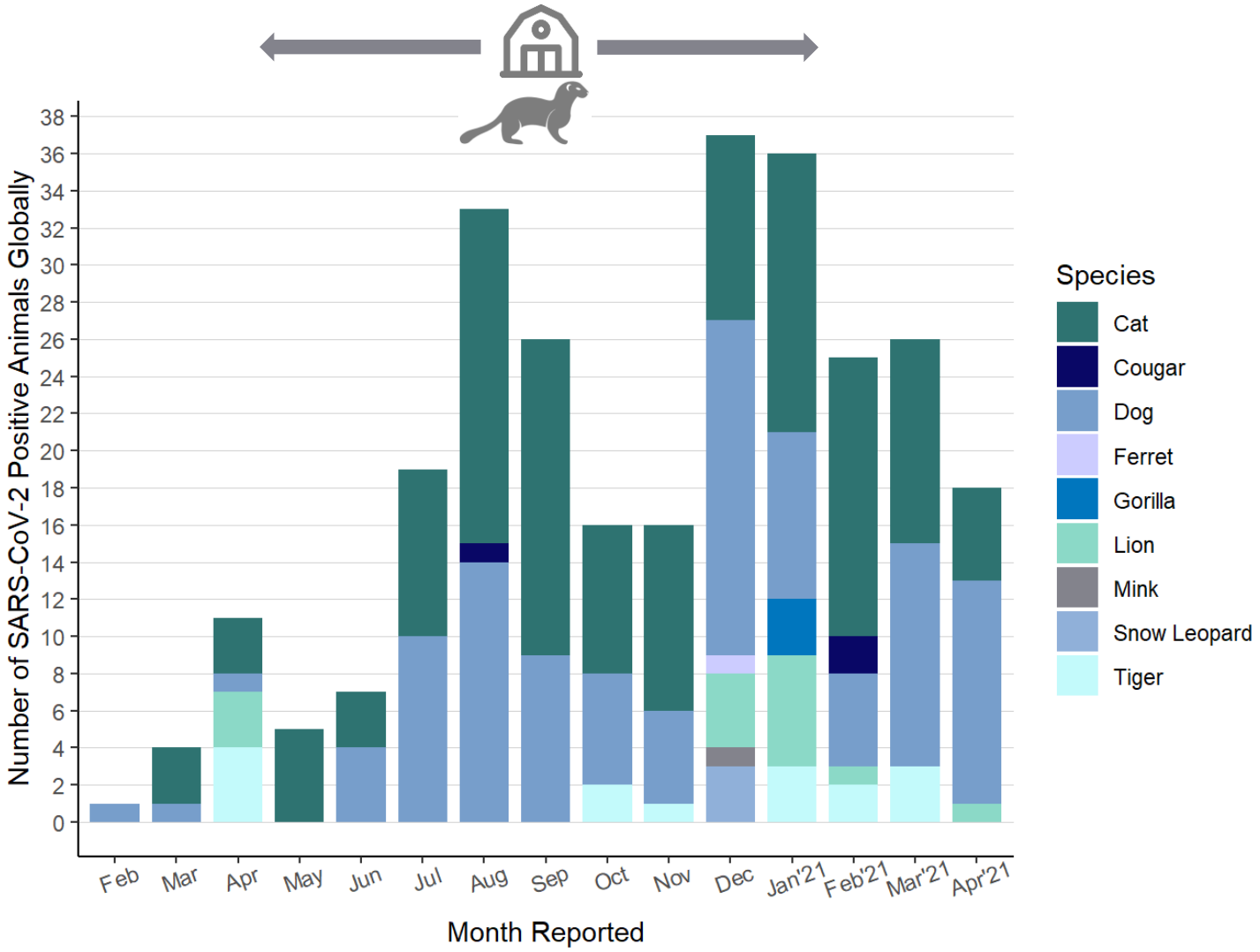
as of April 19, 2021

280 animals from 25 countries*

- **Cats: 132**
- **Dogs: 107**
- **Tigers: 15**
- **Lions: 15**
- **Snow leopards: 3**
- **Cougar: 3**
- **Gorillas: 3**
- **Wild caught mink: 1**
- **Pet ferret: 1**

423 mink farms in 12 countries

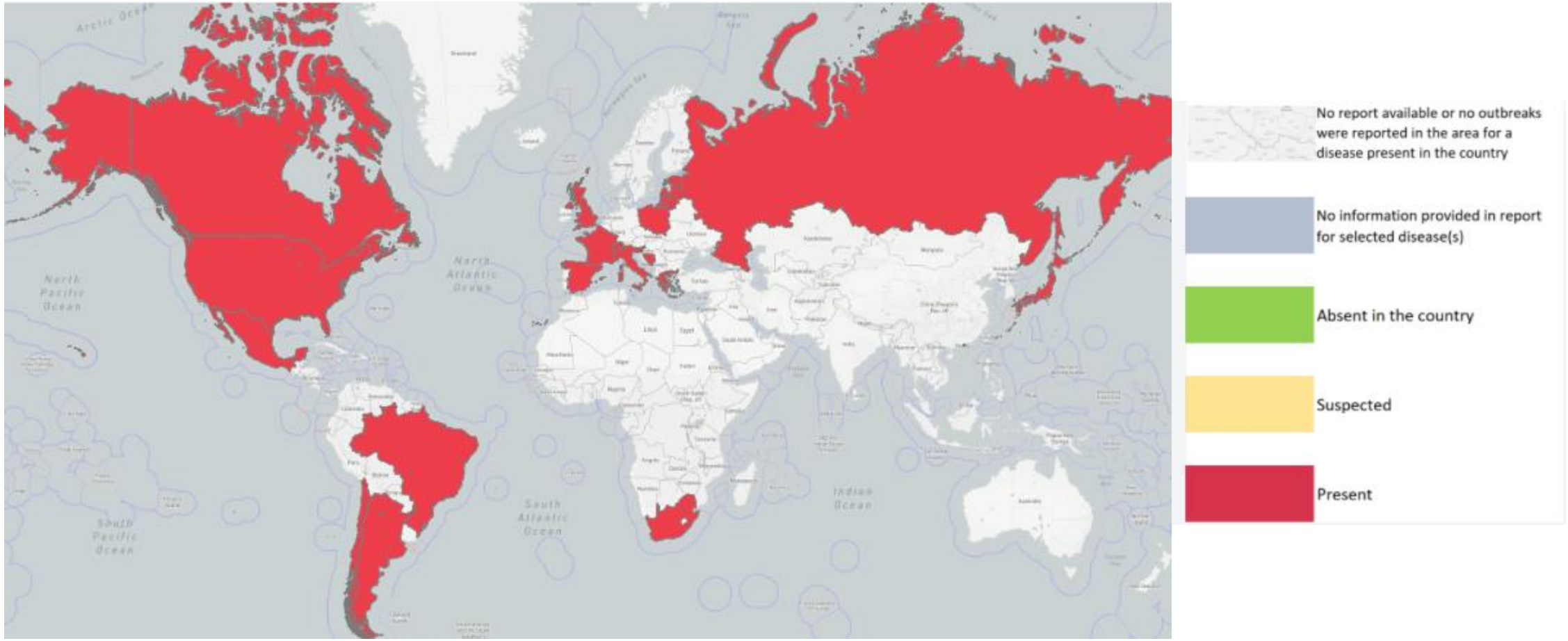
**Does not include individual numbers of positive farmed mink*



Data as of April 19, 2021: OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

Countries Reporting SARS-CoV-2 Positive Animals

as of April 14, 2021



Data as of April 14, 2021: OIE-WAHIS

US Animals Confirmed with SARS-CoV-2 by Species

as of April 19, 2021

Companion Animals

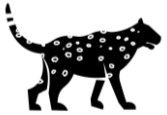
82 cats

64 dogs

Zoo & Sanctuary Animals

14 tigers

5 lions



3 snow leopards

3 gorillas

1 cougar

Production Animals: Mink Farms

16 mink farms

Wildlife

1 wild mink

*Some or all animal cases detected through planned and targeted active surveillance investigations where animals had known or suspected exposures to SARS-CoV-2 through infected people or animals. Does not include individual number of positive farmed mink.

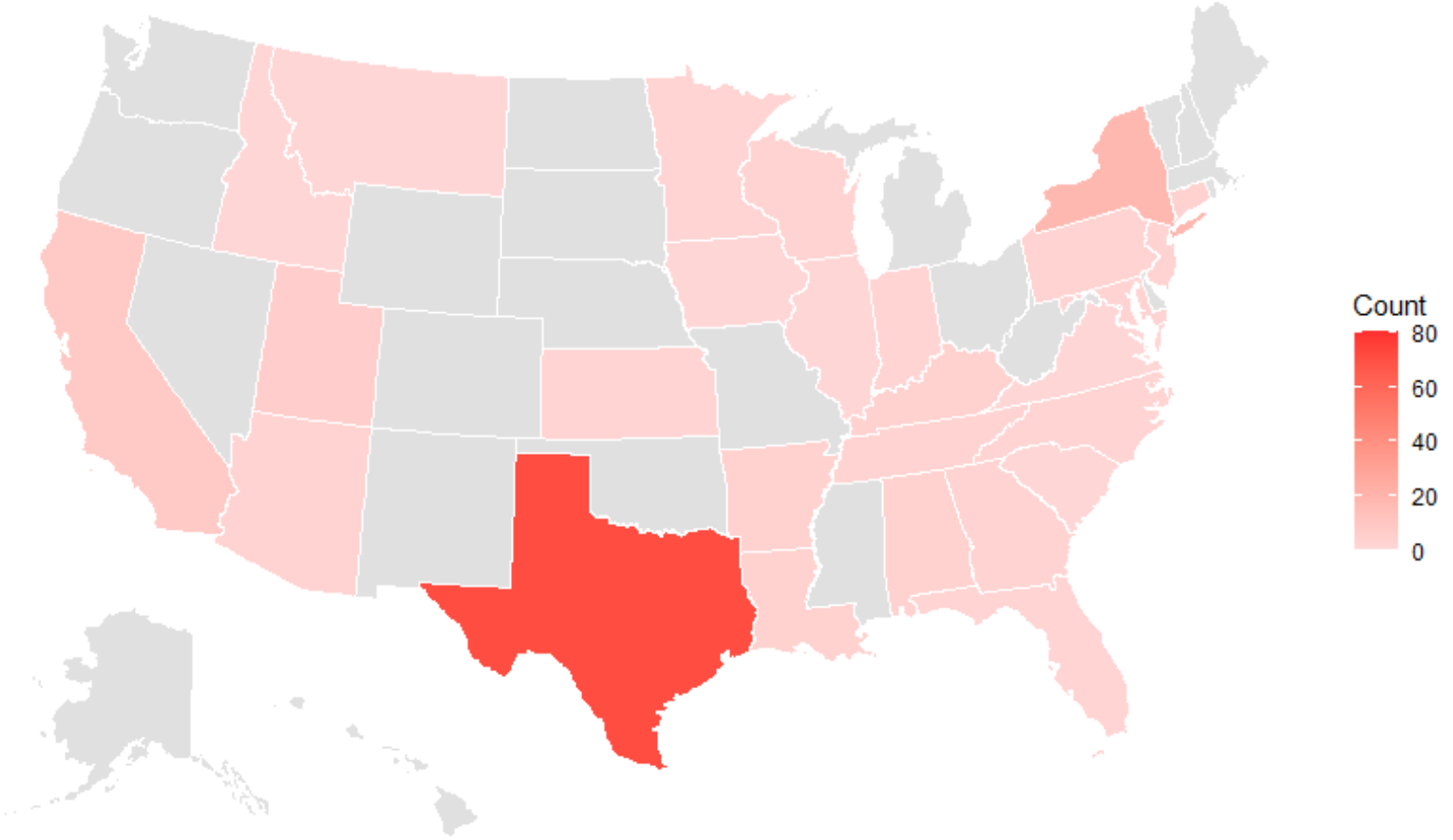
Data as of April 19, 2021: [APHIS | Cases of SARS-CoV-2 in Animals in the United States]

US Animals with SARS-CoV-2 by State

as of April 19, 2021

173 animals (62% of global total) in United States confirmed positive for SARS-CoV-2

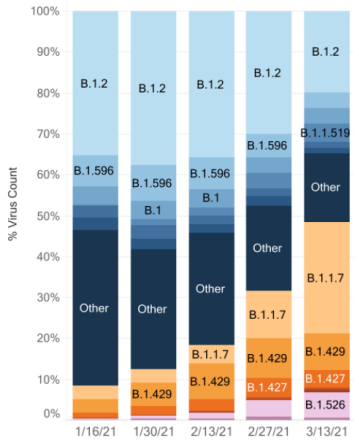
13 presumptive positive animals

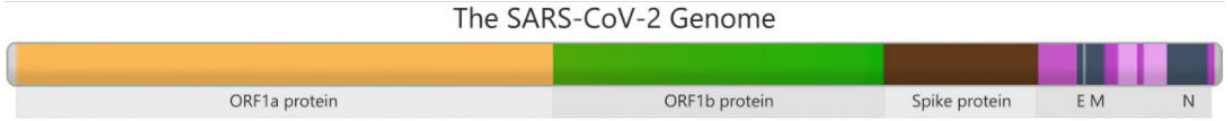


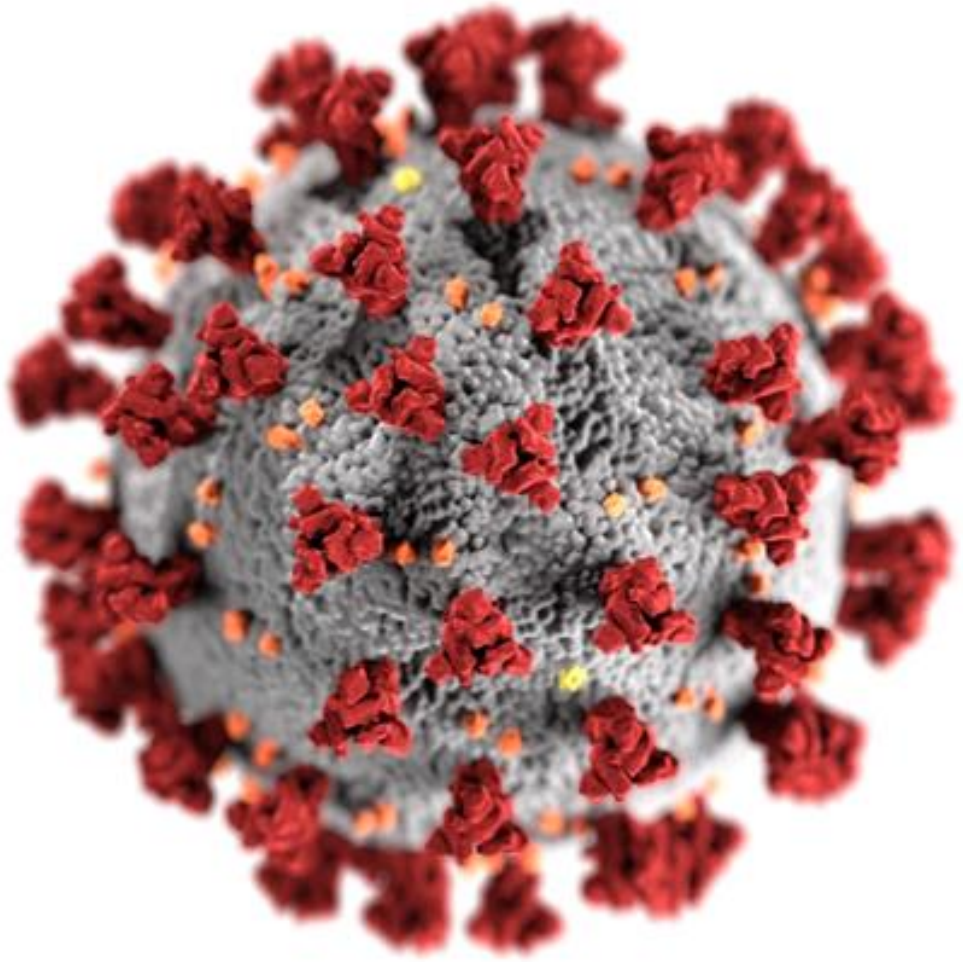
*Some or all animal cases detected through planned and targeted active surveillance investigations where animals had known or suspected exposures to SARS-CoV-2 through infected people or animals. Does not include mink farms or individual number of positive farmed mink.

Data as of April 19, 2021: APHIS | Cases of SARS-CoV-2 in Animals in the United States

SARS-CoV-2 Variants in Animals







First SARS-CoV-2 B.1.1.7 Variant Detected in US Pets

- 1 dog and 1 cat
- Active surveillance
- Owners tested positive for COVID-19
- Both animals recovered

TEXAS A&M TODAY

COVID-19

Texas A&M Research Uncovers First Known COVID-19 UK Variant In Animals

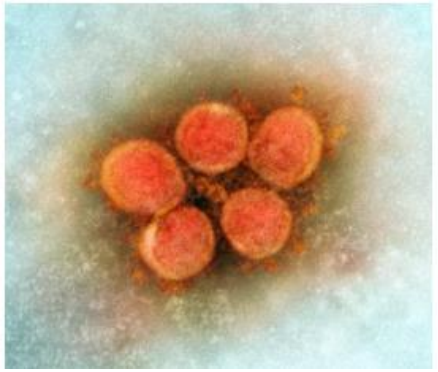
The variant was detected in a dog and cat in Brazos County.

By Jennifer Gauntt, Texas A&M University College of Veterinary Medicine & Biomedical Sciences • MARCH 15, 2021

SHARE 0 SHARES

The United Kingdom variant (B.1.1.7) of SARS-CoV-2, the virus that causes COVID-19, has been detected for the first time in a dog and a cat from the same household in Brazos County, Texas, as part of a study led by researchers at Texas A&M University.

The first reported finding of the B.1.1.7 human variant virus in any animal worldwide, this detection of the UK variant in animals in a natural household setting reinforces the importance of having procedures in place to monitor the SARS-CoV-2 viral genome as it crosses species barriers, giving specialists both insight and time to study potential new variants before they spread through animal or human populations.



Texas A&M Research Uncovers First Known COVID-19 UK Variant In Animals - Texas A&M Today (tamu.edu)

SARS-CoV-2 Variants in Animals Detected Globally

- **Italy**
  - B.1.1.7 in a cat
- **United Kingdom**
  - B.1.1.7 in dogs and cats
- Highlights the importance of surveillance and sequencing

British COVID-19 variant found in cat in Italy

Symptoms appeared some 10 days after owners got sick

Redazione ANSA

ROME

18 March 2021
15:20
NEWS

- RIPRODUZIONE RISERVATA

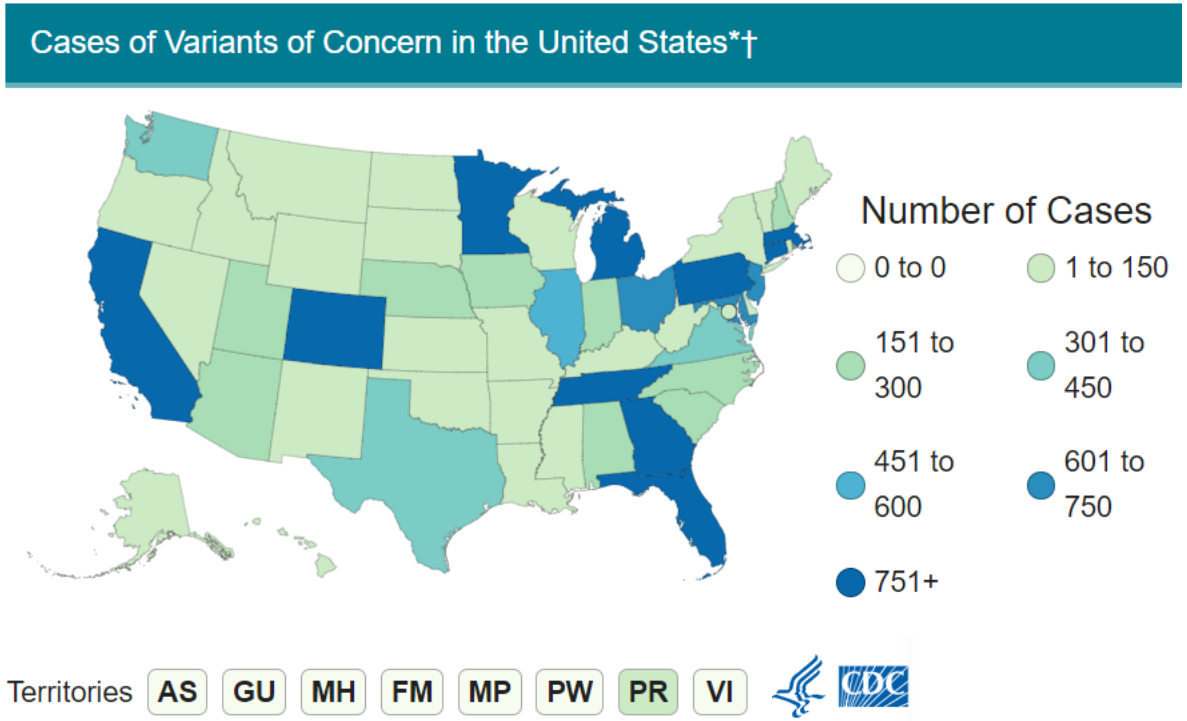
CLICK TO ENLARGE

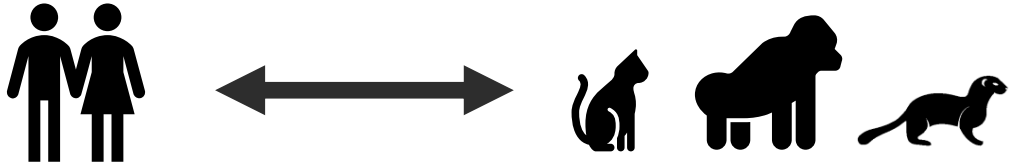
British COVID-19 variant found in cat in Italy - English - ANSA.it; Myocarditis in naturally infected pets with the British variant of COVID-19 (biorxiv.org)

SARS-CoV-2 Interagency Group (SIG)

One Health Genomics Working Group Objectives

- Transmission dynamics in animal populations & between human & animal populations;
- Risks associated with host shift events in the emergence of new viral strains;
- Research & science needed to evaluate how the zoonotic nature of SARS-CoV-2 will impact human and animal populations;
- Other relevant topics as needs arise





Data as of April 12, 2021: [US COVID-19 Cases Caused by Variants | CDC]

Asian Small-Clawed Otters at Georgia Aquarium Test Positive for COVID-19

Georgia Aquarium
@GeorgiaAquarium

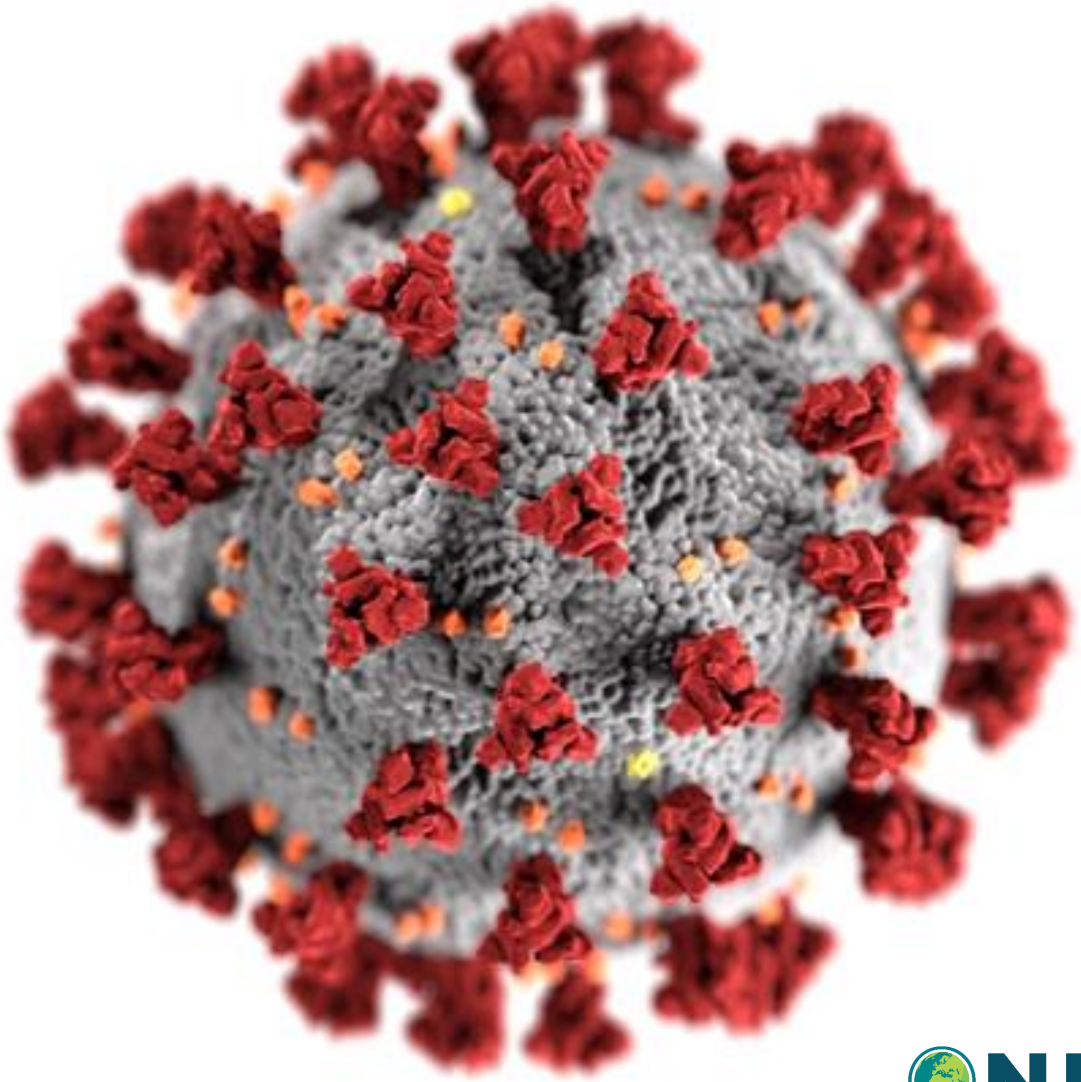
Our Asian small-clawed otters have tested positive for SARS-CoV-2, the virus that causes COVID-19. They showed mild symptoms: sneezing, runny noses, lethargy, & coughing. We're happy to report they're doing well & expected to recover. They're off exhibit & being cared for.

APRIL 18, 2021

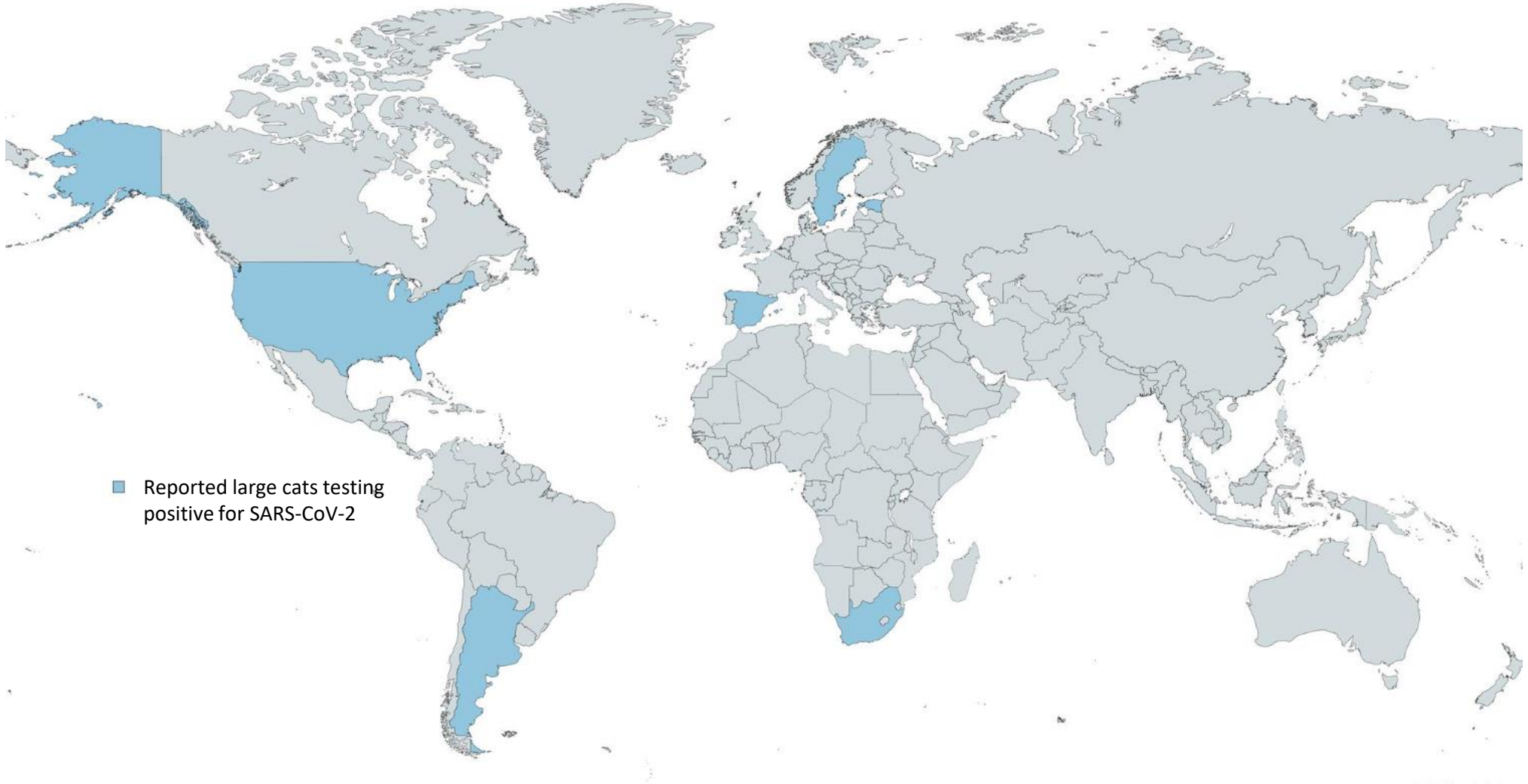
Asian Small-Clawed Otters at Georgia Aquarium Test Positive for COVID-19

[Asian Small-Clawed Otters at Georgia Aquarium Test Positive for COVID-19 | Georgia Aquarium]

SARS-CoV-2 and Big Cats



Big Cats Testing Positive for SARS-CoV-2 Globally



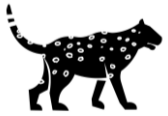
Data as of April 14, 2021: OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

Big Cats Testing Positive for SARS-CoV-2 in the US

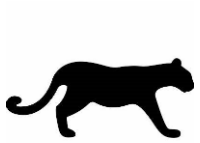
9 facilities

14 tigers

4 lions



3 snow leopards



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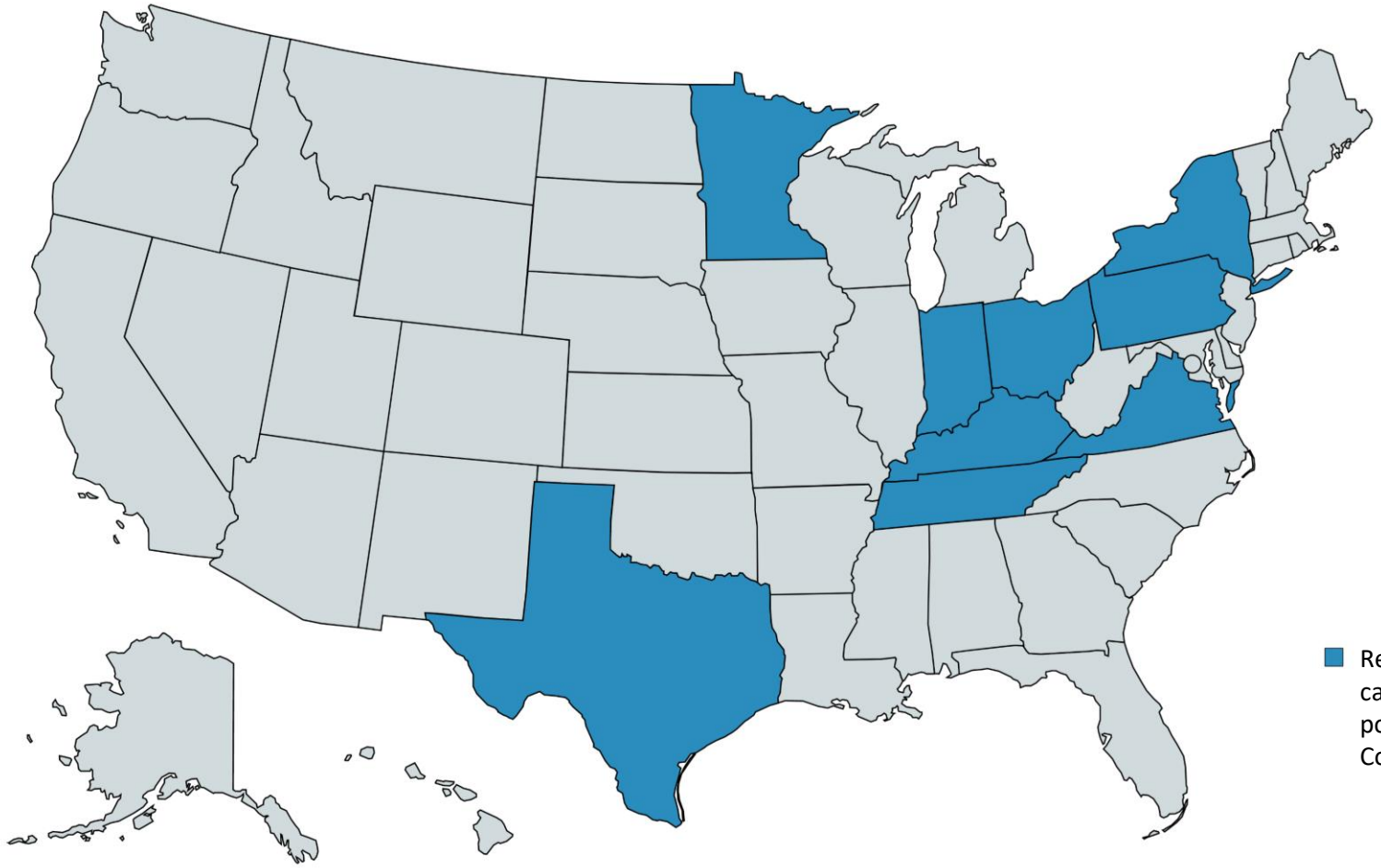


Data as of April 14, 2021: OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

WHO- Convened Global Study of Origins of SARS-CoV-2: China Part

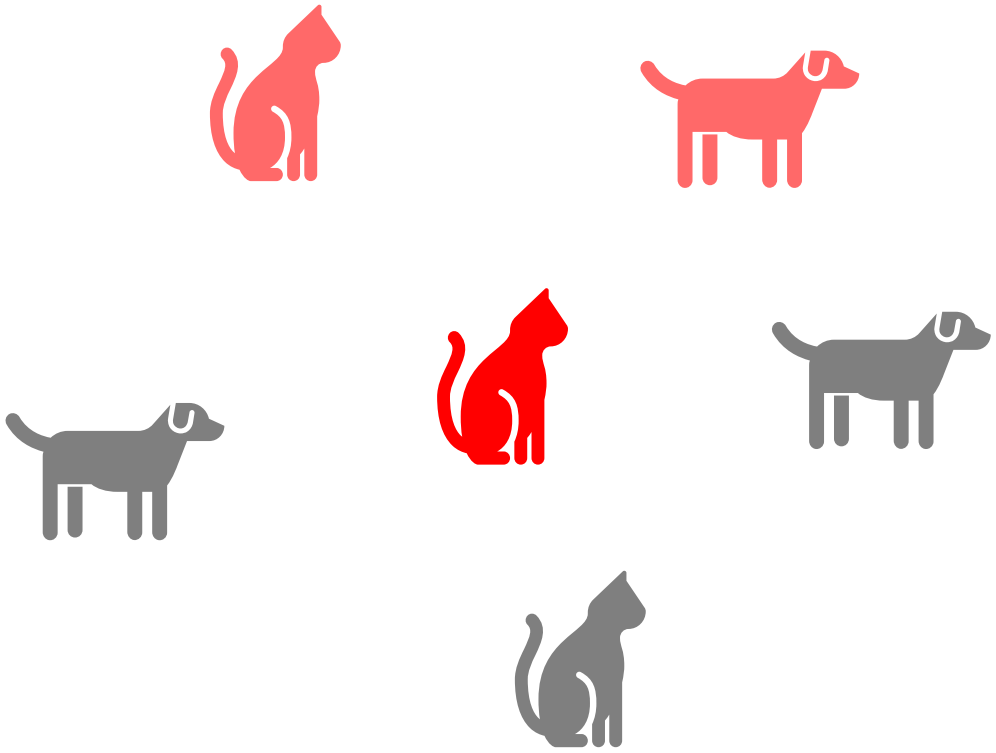
Joint WHO-China study: 14 January - 10 February 2021

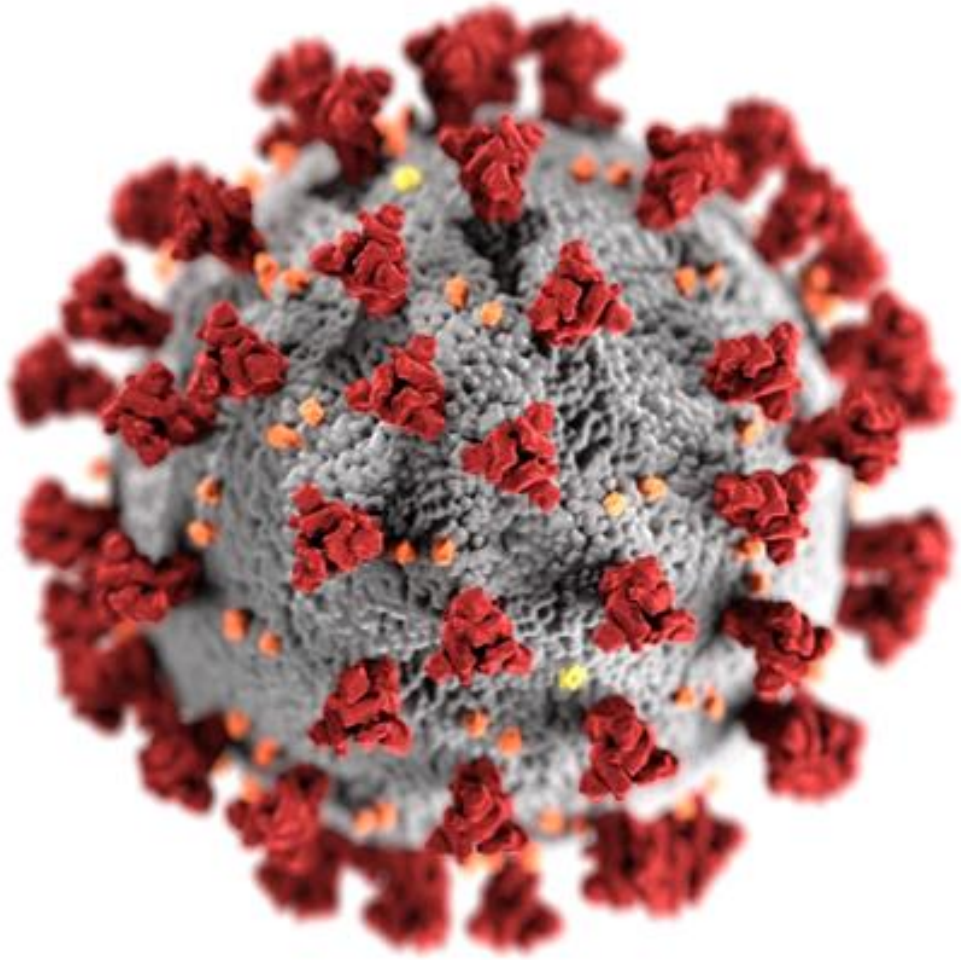
- Introduction through an intermediate host followed by zoonotic transmission considered to be likely to very likely
- Direct zoonotic transmission (also termed: spillover) was listed as possible to likely
- Joint Statement on the WHO-Convened COVID-19 Origins Study - United States Department of State

WHO-convened global study of origins of SARS-CoV-2: China Part

US Natural SARS-CoV-2 Infections in Companion Animals

Clinical Signs and Epidemiology

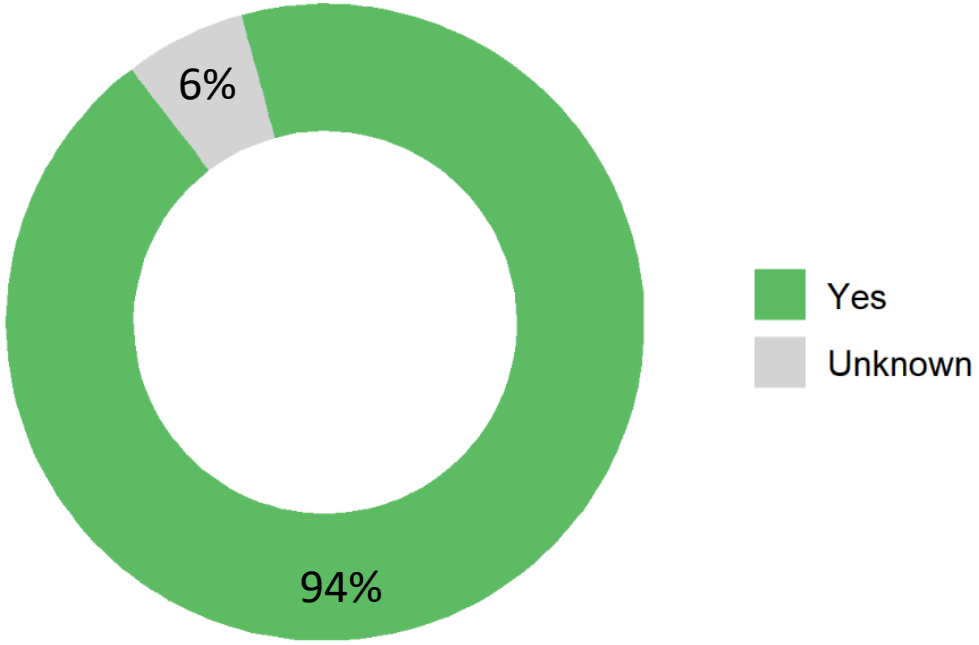




Companion Animals Analysis

Epi Links to COVID-19

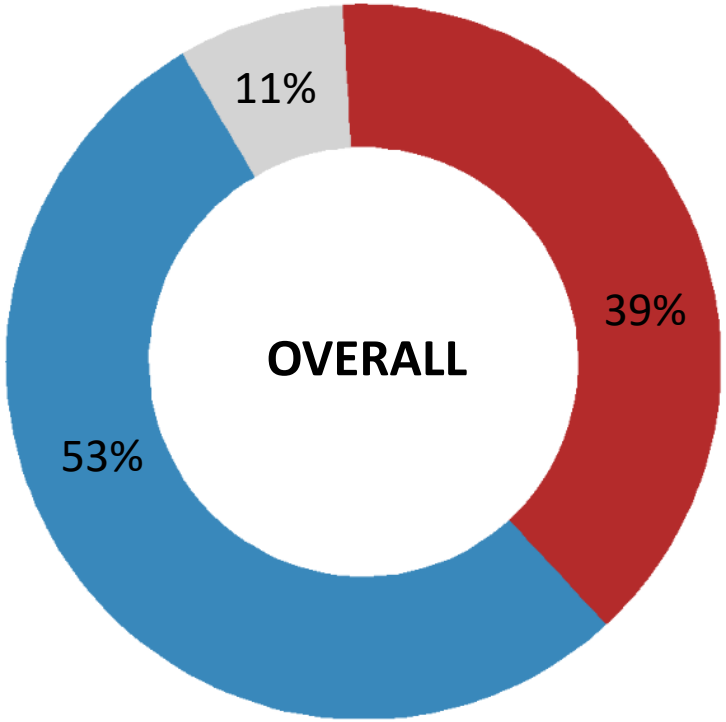
- 137 of 146 companion animals had a known exposure to a person with COVID-19
  - Primarily the owner
  - 9 animals had unknown histories.

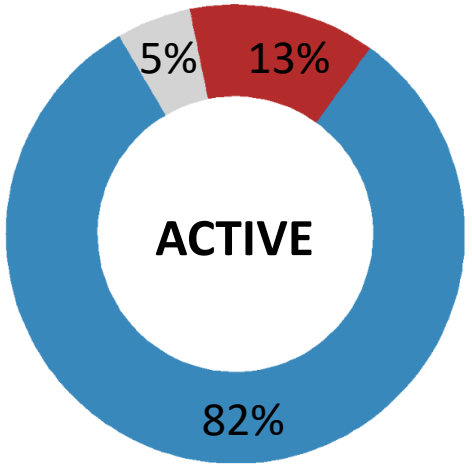


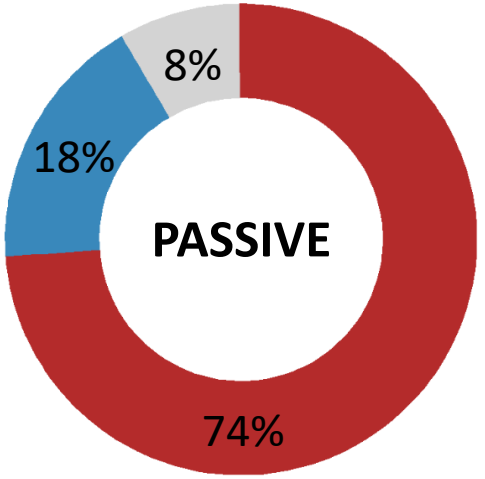
PRELIMINARY DATA: SUBJECT TO CHANGE

Companion Animals Analysis

Clinical presentation in SARS-CoV-2 infected animals

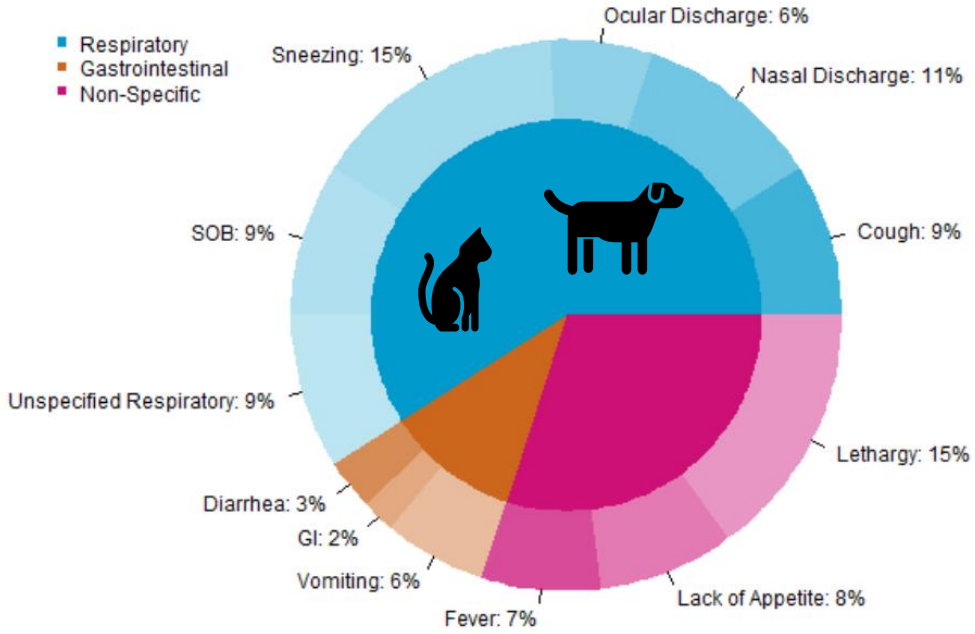


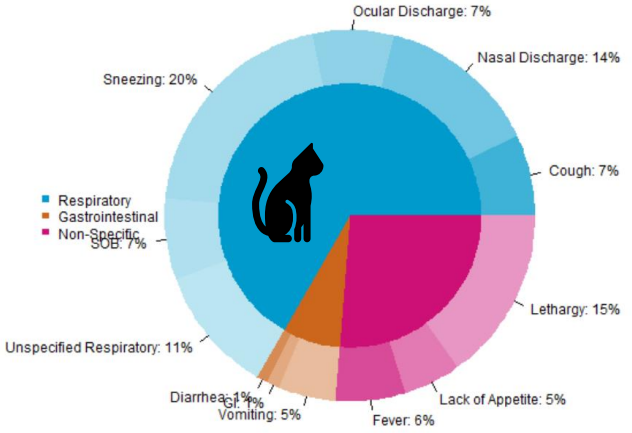


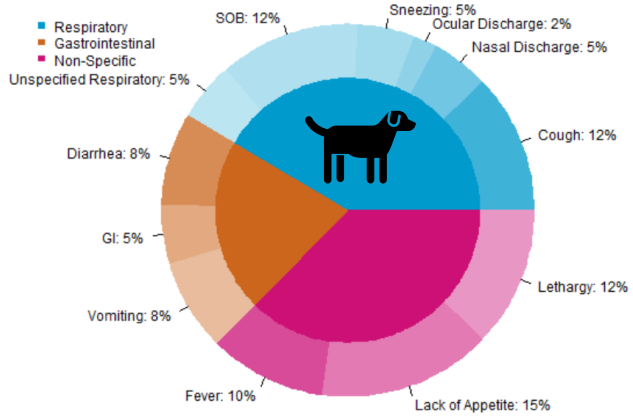


PRELIMINARY DATA: SUBJECT TO CHANGE

Clinical Presentation in SARS-CoV-2 Infected Animals





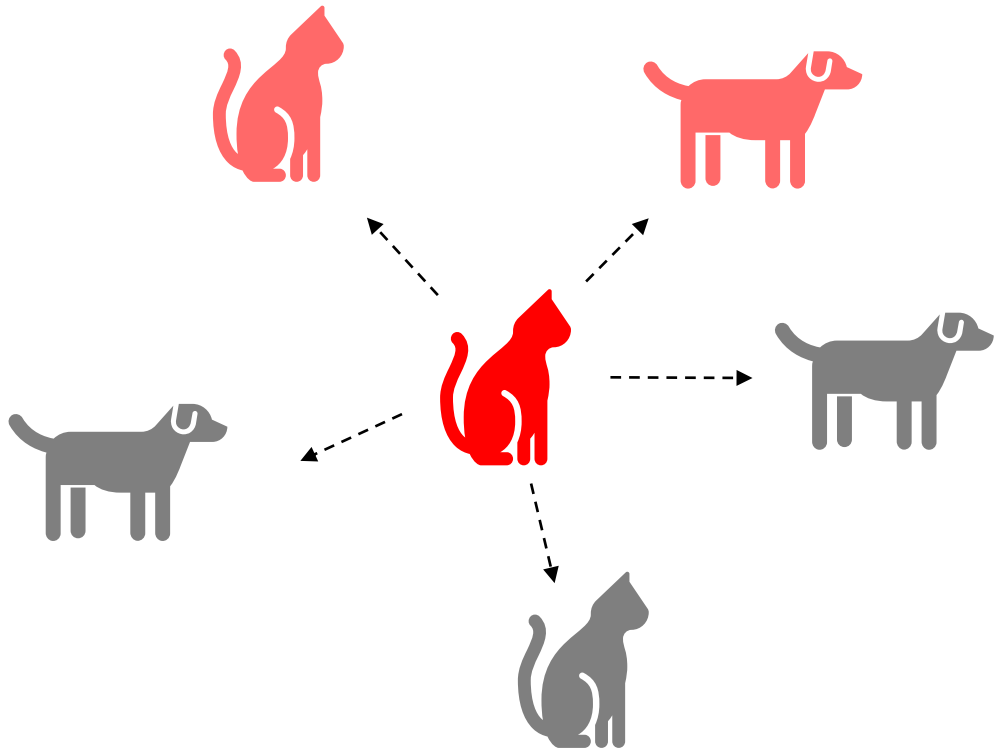


PRELIMINARY DATA: SUBJECT TO CHANGE

Companion Animals Analysis

Probability of infection in multi-pet households

- **42%** probability (CI 29-58) that if one animal in a household is positive for SARS-CoV-2, others in the household are too

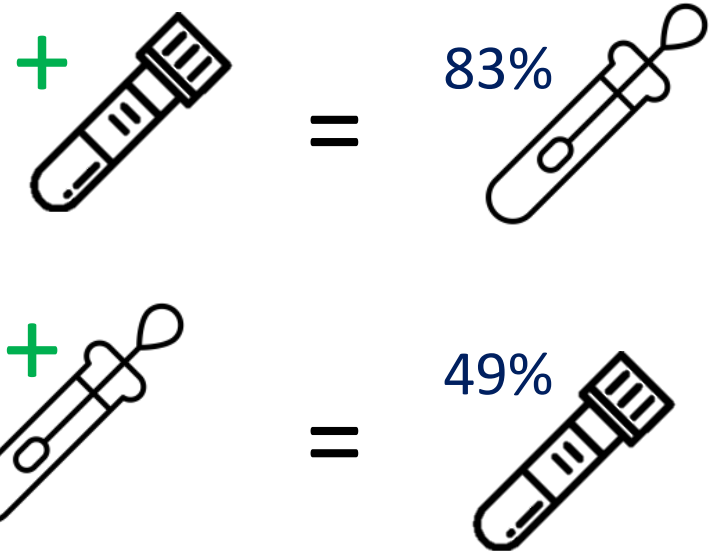


PRELIMINARY DATA: SUBJECT TO CHANGE

Confirmed Positive Animals Analysis

Association between virus detection and antibodies

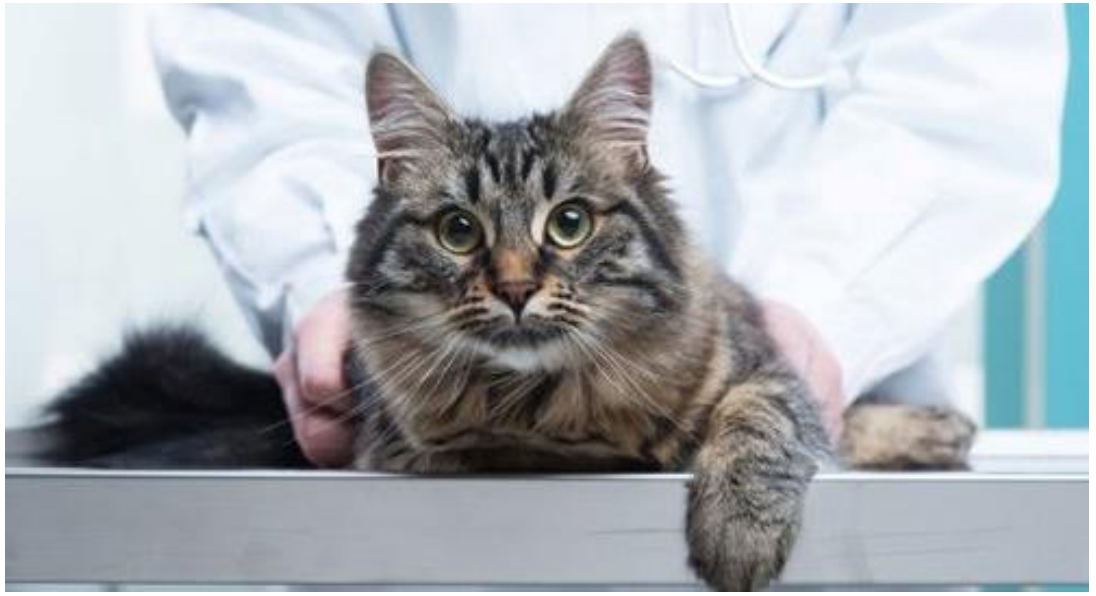
- 83% probability (CI 67-92) that when an animal is positive by virus neutralization, it will also be positive by PCR
- 49% probability (CI 37-62) that when an animal is positive by PCR, it will also be positive by virus neutralization



PRELIMINARY DATA: SUBJECT TO CHANGE

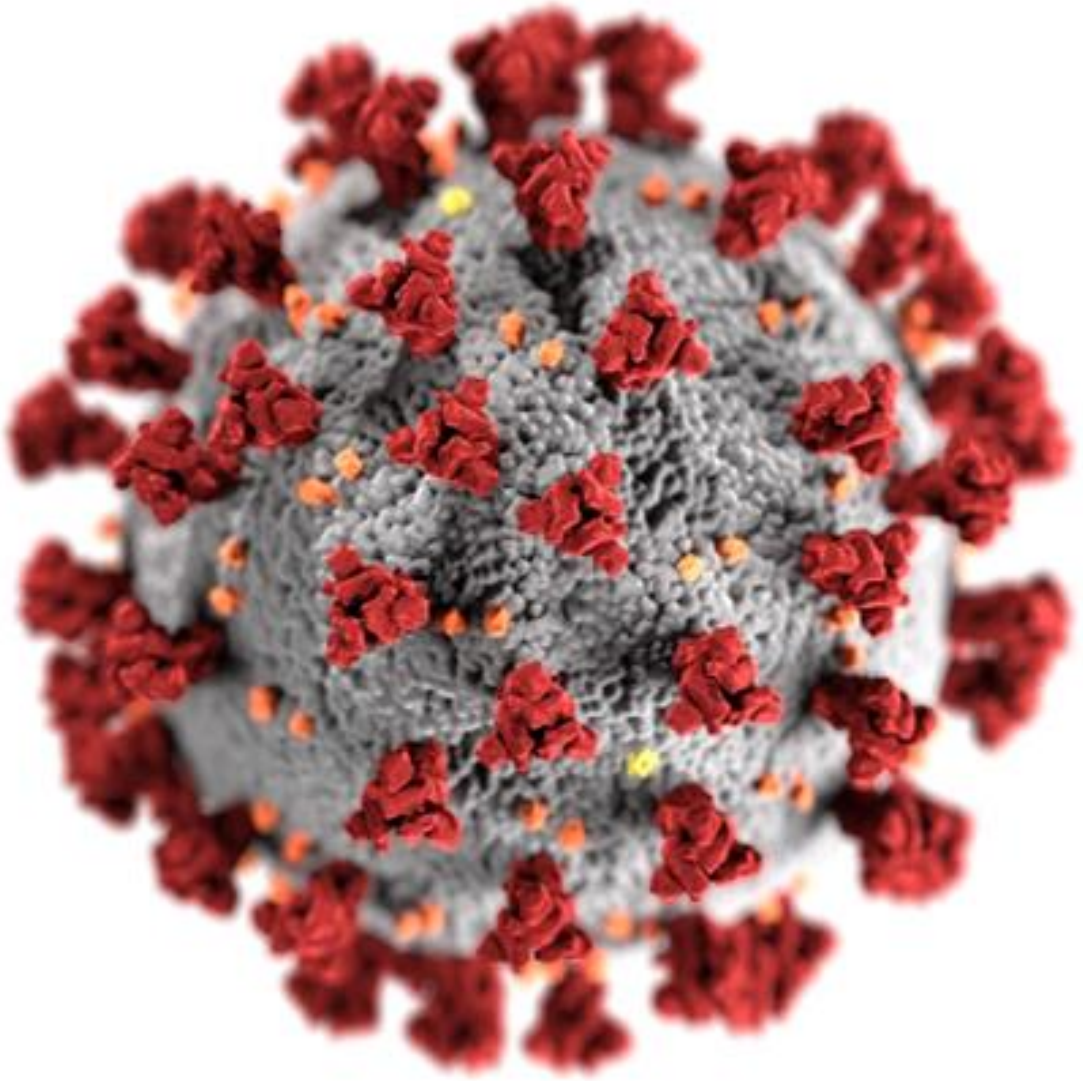
Severe Outcomes of SARS-CoV-2 in Companion Animals

- **ZOHU presentation**: "Investigation of Severe Outcomes of SARS-CoV-2 Infection in Companion Animals"
  - Evaluation of 10 animal cases of severe outcomes
  - Describes algorithm developed to evaluate cases, application to cases
    - Clinical signs, comorbidities, diagnostic results
- **Severe disease in companion animals as a result of SARS-CoV-2 infection is rare**
  - (2 [2%] of 94 cases)



- **Recording to be posted at:** Severe Outcomes of SARS-CoV-2 in Companion Animals

SARS-CoV-2 and Mink



What We Know About SARS-CoV-2 and Mink

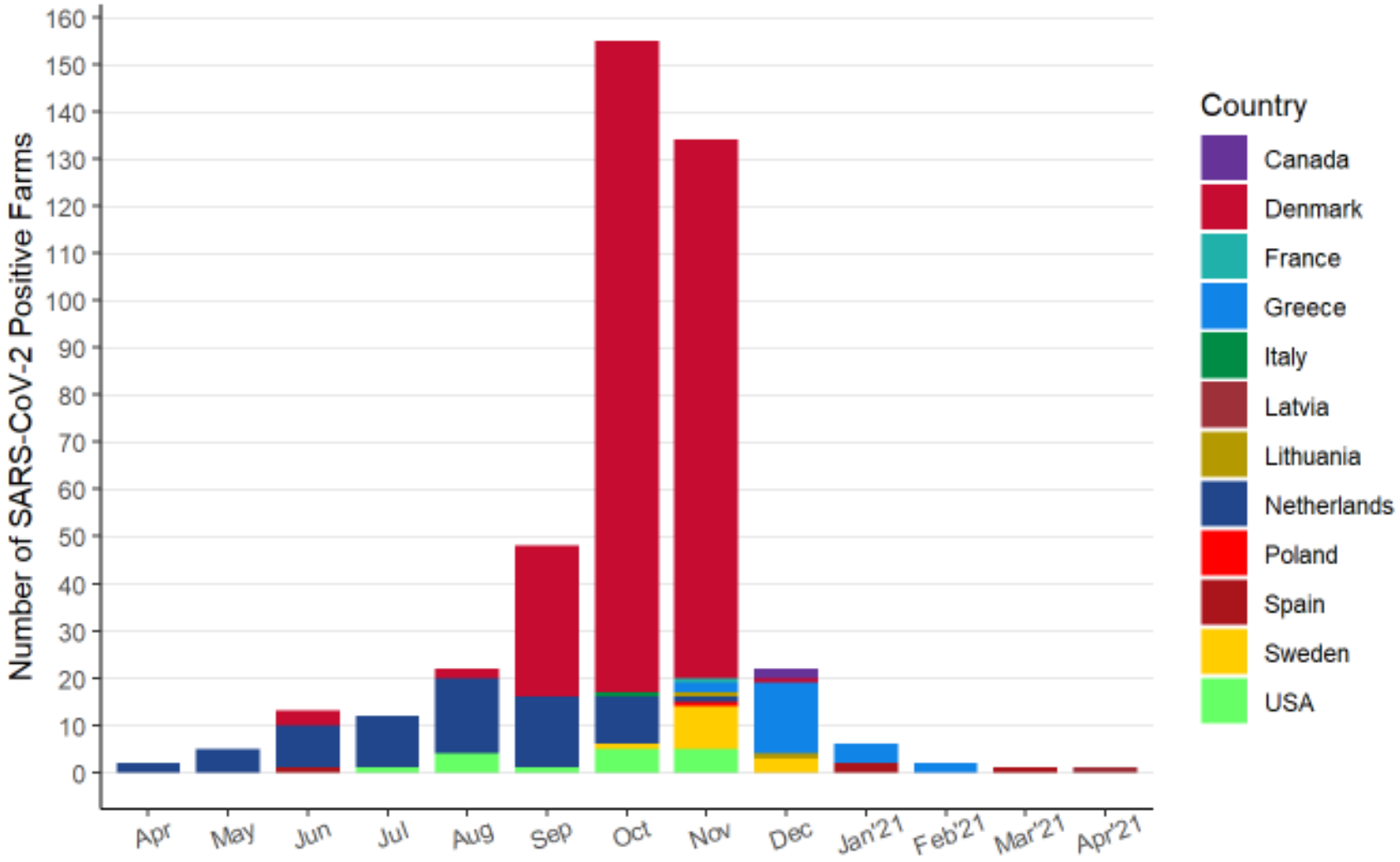
- Mink are **highly susceptible** to SARS-CoV-2
- Mink can spread SARS-CoV-2 to mink and other animals in the farm environment (dogs, cats, wild caught mink)
- Extra precautions must be taken to **protect mink and people** on farms

Mink Farms Confirmed with SARS-CoV-2 Globally

as of April 14, 2021

423 mink farms in 12 countries

- Denmark: 290
- Netherlands: 69
- Greece: 23
- United States: 16
- Sweden: 13
- Canada: 2
- Lithuania: 2
- Spain: 4
- Italy: 1
- France: 1
- Poland: 1
- Latvia: 1



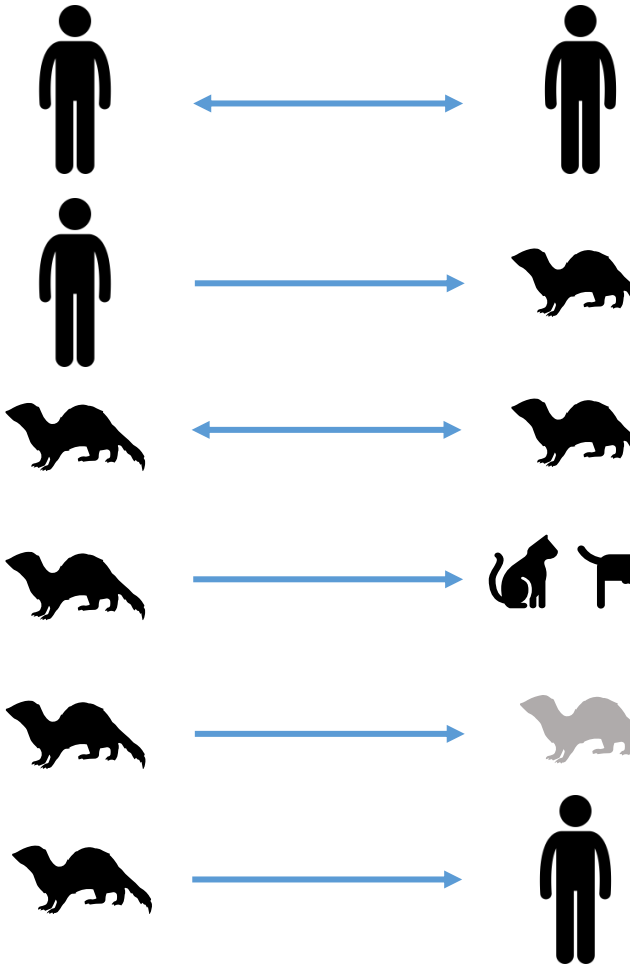
Data as of April 14, 2021: OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

What are One Health Partners Doing?

- On-farm investigations led by CDC in collaboration with state officials
- Laboratory confirmation at U.S. Department of Agriculture National Veterinary Services Laboratories
- Comparative analysis of SARS-CoV-2 sequences
- Generating guidance, recommendations, and toolkits
- Hosting worker safety webinars for mink farm workers and processors
- Addressing gaps in active surveillance for mink farms

Link to ZOHU Call recording:
Utah Mink Farm Investigations

US Farm Investigations: Initial Findings



We know that SARS-CoV-2 infection spreads most commonly from **person to person**

Infected **people** introduce SARS-CoV-2 **to farmed mink**

Infected **mink** spread SARS-CoV-2 **to other farmed mink**

Infected **mink** spread SARS-CoV-2 **to cats and dogs**

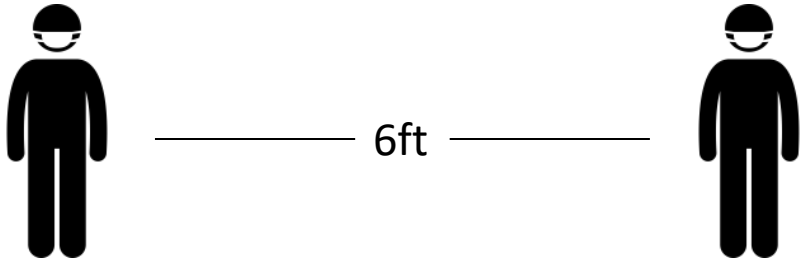
Infected **mink** spread SARS-CoV-2 **to wild mink**

Mink to human spread suspected in United States, and was confirmed in Europe

PRELIMINARY DATA: SUBJECT TO CHANGE

Public Health and Animal Health Recommendations

Screen and restrict access to the farm and buildings where animals are kept

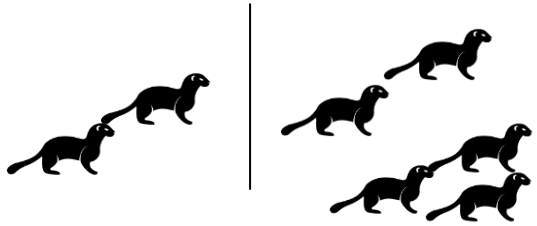


Social distance

Wear appropriate PPE even if you don't feel sick

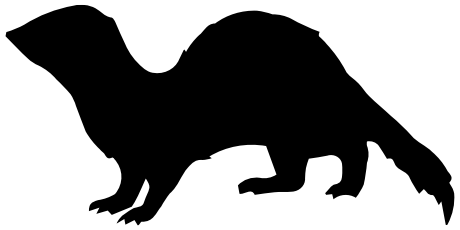
Stay home when sick

Clean and disinfect using an EPA-approved disinfectant



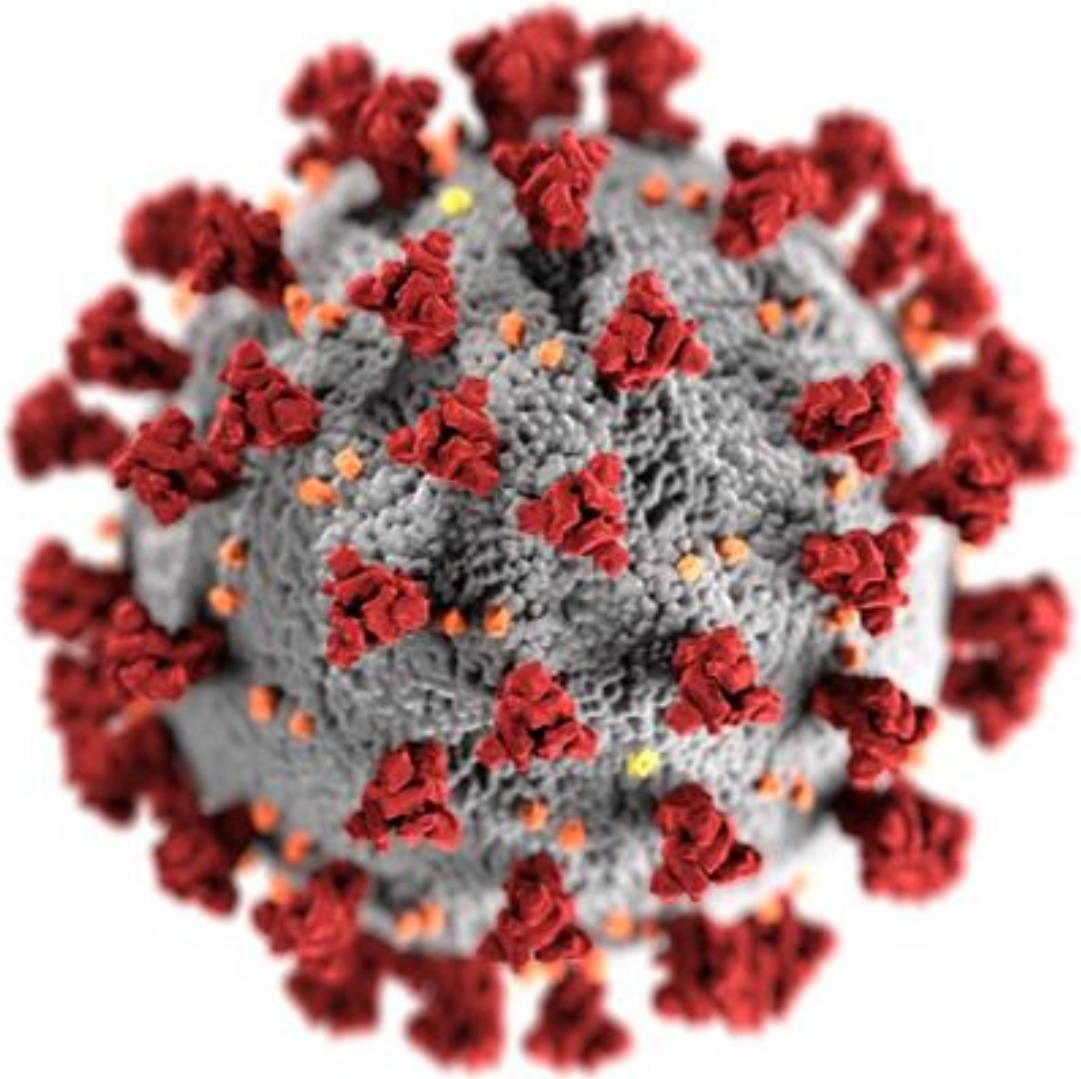
Quarantine new mink before introducing to the herd

Key Messages on Mink



- No evidence that mink are playing a significant role in the spread of SARS-CoV-2 to people
- For most people in the United States, the risk of SARS-CoV-2 infection from animals is low
  - However, there is a higher risk for people working on mink farms
- Mink farms should follow available guidance for farmed mink and other mustelids to prevent introducing SARS-CoV-2 to mink on farms
- Worker safety is critical to protect people and animals on mink farms
- Mink farm workers with COVID-19 should avoid contact with animals, especially mink

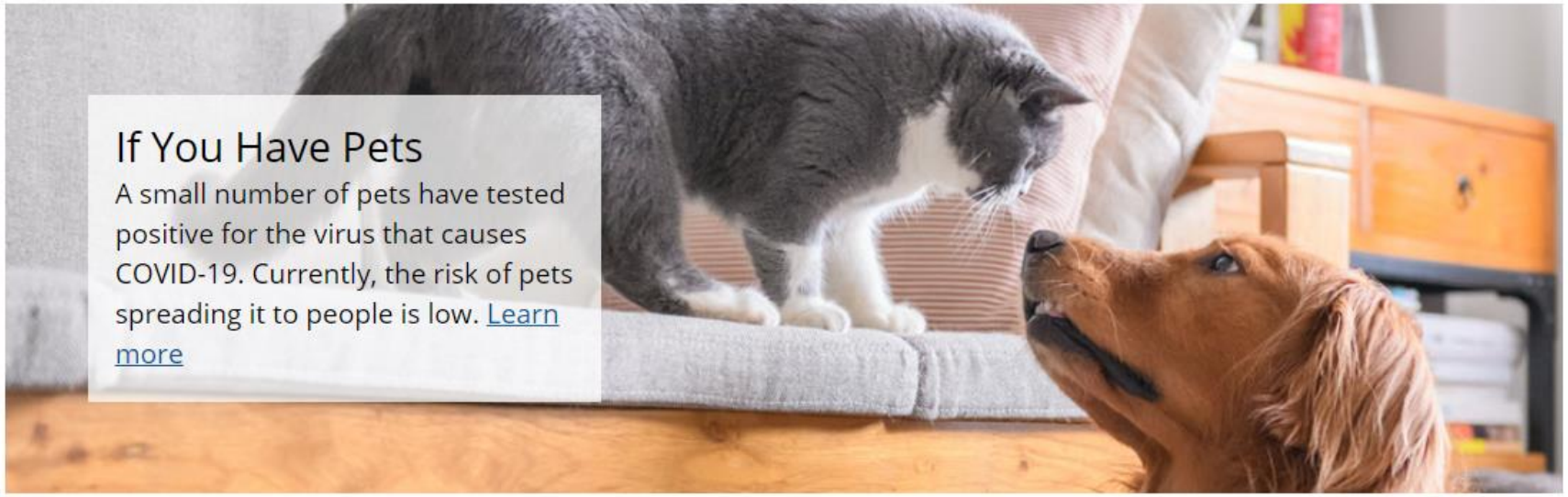
Guidance and Resources



CDC Guidance: Pets and Other Animals Landing Page

Pets and Other Animals

Updated Feb. 11, 2021 Languages Print



- Animals and COVID-19
- If You Have Pets
- If Your Pet Tests Positive
- Handlers of Service & Therapy Animals

[Pets and Other Animals | CDC]

Updated: COVID-19 and Animals Webpage

- Reflects new species testing positive for SARS-CoV-2
- New information on SARS-CoV-2 and mink
- Main messaging has **not** changed

COVID-19 and Animals | CDC

Updated: Evaluation for SARS-CoV-2 Testing in Animals

- Streamlined with guidance for SARS-CoV-2 testing in North American wildlife
- Reflects the new confirmatory testing process for animals

Table 1: Criteria to Guide Evaluation and Laboratory Testing for SARS-CoV-2 in Animals

Criteria	Epidemiological Risk		Clinical Features
A	Animal with history of exposure[3] to a person or animal suspected or confirmed to be infected with SARS-CoV-2.	AND	Animal has clinical signs suspicious of SARS-CoV-2 infection.[3]
B	Animal with exposure to a known high-risk environment (i.e., where human cases or animal cases have occurred), such as a residence, facility, or vessel (e.g. nursing home, prison, cruise ship).		
C	Threatened, endangered or otherwise imperiled/rare animal[4] in a rehabilitation, sanctuary or zoological facility with possible exposure to SARS-CoV-2 through an infected person or animal.	AND	Animal is asymptomatic; OR Animal has clinical signs suspicious of SARS-CoV-2 infection[3].
D	Animals in a mass care or group setting (e.g., farm, animal feeding operation, animal shelter, boarding facility, zoo, or other animal holding) including companion animals, livestock, and other species, where their exposure history to people with COVID-19 is unknown.	AND	A cluster of animals show clinical signs suspicious of SARS-CoV-2 infection.[3]

Evaluation for SARS-CoV-2 Testing in Animals | CDC

Key Messages on Animals and COVID-19

- No evidence animals are playing significant role in spread of COVID-19 to people
- Based on limited information available to date, risk of animals, including pets, spreading COVID-19 to people is considered to be low
- We are still learning about this virus, but it appears it can spread from people to animals in some situations
- If you are sick with COVID-19 (either suspected or confirmed by a test), you should restrict contact with your pets and other animals, just as you would with people
- Talk to your veterinarian if your pet gets sick or if you have any concerns about your pet's health

COVID-19 and Animals

Stay Up-to-Date with Trusted Resources

COVID-19 and Animals

- Pets and Other Animals
- FAQs: COVID-19 and Animals
- COVID-19 and Animals
- If You Have Pets
- What to Do if Your Pet Tests Positive for the Virus that Causes COVID-19
- Guidance for Handlers of Service and Therapy Animals
- Interim Infection Prevention and Control Guidance for Veterinary Clinics Treating Companion Animals During the COVID-19 Response
- Interim Guidance for Public Health Professionals Managing People With COVID-19 in Home Care and Isolation Who Have Pets or Other Animals
- Toolkit: One Health Approach to Address Companion Animals with SARS-CoV-2
- COVID-19 Recommendations for Pet Stores, Pet Distributors, and Pet Breeding Facilities
- COVID-19 Considerations for Animal Activities at Fairs, Shows, and Other Events
- Evaluation for SARS-CoV-2 Testing in Animals
- Interim Guidance for SARS-CoV-2 Testing in North American Wildlife
- Interim recommendations for intake of companion animals from households where humans with COVID-19 are present
- Recommendations for Disaster Sheltering of Household Pets, Service Animals, and Support Animals during the COVID-19 Pandemic

Federal COVID-19 Websites

- USA.gov
- Coronavirus.gov
- US Department of Agriculture
  - USDA Confirmed Cases of SARS-CoV-2 in Animals in the US
- US Food and Drug Administration
  - https://www.fda.gov/media/139430/download
- US Fish and Wildlife Service
- US Environmental Protection Agency

Partner COVID-19 Websites

- World Health Organization (WHO)
- Food and Agriculture Organization of the United Nations (FAO)
- World Organisation for Animal Health (OIE)
- American Veterinary Medical Association (AVMA)

One Health

- CDC One Health
- CDC Healthy Pets, Healthy People
- CDC Pet Emergency Preparedness
- CDC Pet Disaster Kit
- CDC Pets in Evacuation Centers
- Zoonoses and One Health Updates Call
- USDA One Health

One Health Federal Interagency COVID-19 Coordination Group (OH-FICC)

21 Federal Agencies Representing Multiple Departments

Chaired by CDC

Coordination with **>130** US Government partners

Purpose: Bring together representatives from key federal agencies representing multiple departments to collaborate to address One Health technical aspects of COVID-19

OH-FICC Agency Representation

National Institutes of Health

USAID
FROM THE AMERICAN PEOPLE

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Agricultural Research Service

FEMA

Functions of the OH-FICC

- Share information and timely updates on One Health activities related to COVID-19 response
- Ensure coordinated picture of projects to improve cooperation and improve efficiency of USG resources
- Provide an accessible forum for representatives
- Facilitates connections of operational personnel
- Representatives share information at home agency or department

Five OH-FICC Subgroups and Agency Chairs

Companion Animals
(Working Animals)

CDC

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

DOI USGS

Production Animals
(previously Livestock)

USDA-APHIS

Environmental Health

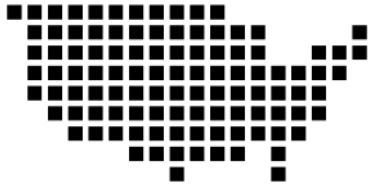
ATSDR, CDC

One Health State-Federal COVID-19 Coordination Call

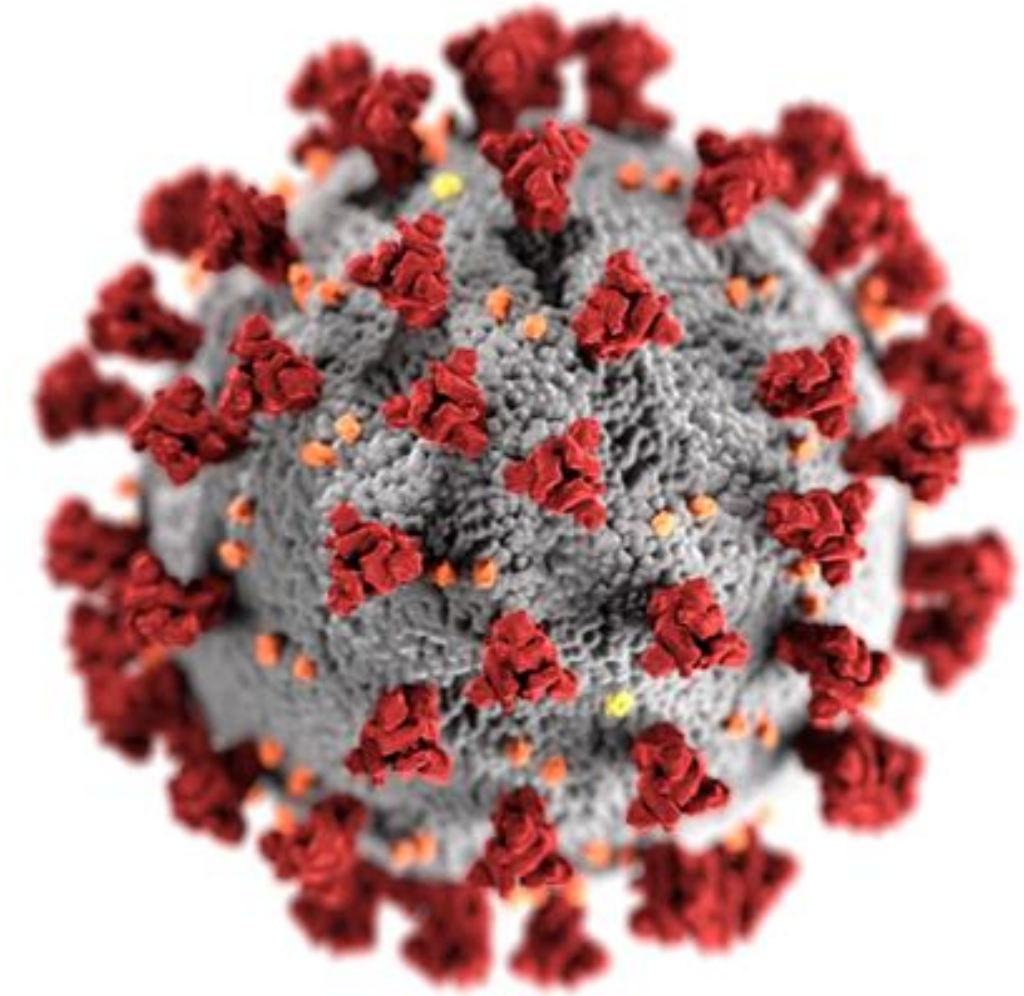
Invitees: State and local public health veterinarians, state animal health officials, state wildlife officials, and federal partners

Purpose: Bring together state, tribal, local, territorial, and federal officials on the One Health aspects of COVID-19 to share updates, disseminate information, and address concerns.

Activities: Provided technical support to state partners, collaborated on animal case investigations, sought feedback on guidance needs



One Health Federal Interagency COVID-19 Coordination (OH-FICC) Subgroup Updates



Animal Diagnostics and Testing Subgroup

Companion Animals
(Working Animals)

CDC

Animal Diagnostics and Testing

Wildlife and Zoo Animals

DOI USGS

Production Animals
(previously Livestock)

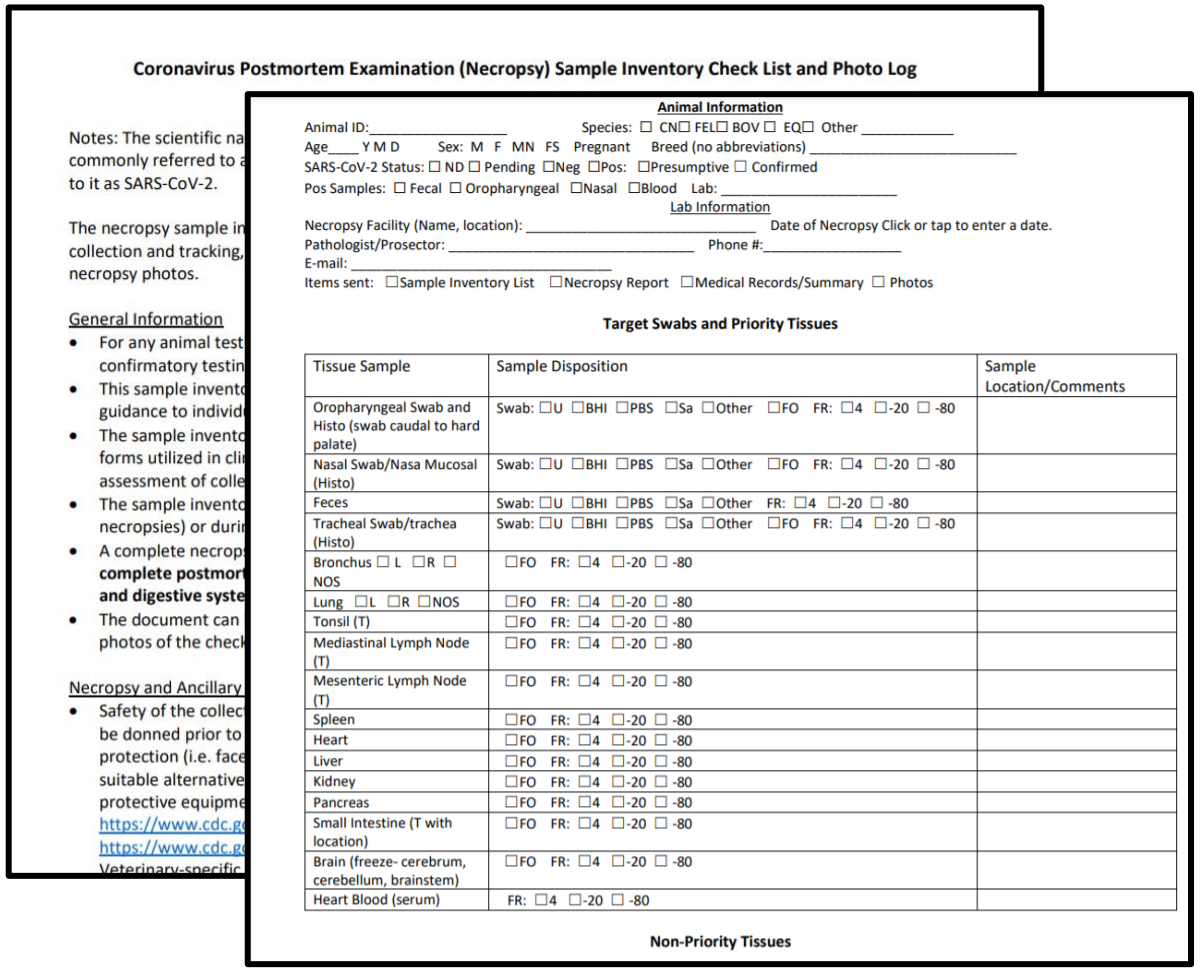
USDA-APHIS

Environmental Health

ATSDR, CDC

Veterinary Laboratory Investigation & Response Network (Vet-LIRN)

- Necropsies
  - Resources www.fda.gov/media/139430/download
  - Facilitating Necropsies for COVID-positive deceased animals
- Interlaboratory Comparison Exercise (ICE)
  - Assess sensitivity/specificity
  - 50-60 laboratories



Coronavirus Postmortem Examination (Necropsy) Sample Inventory Check List and Photo Log

Notes: The scientific na
commonly referred to a
to it as SARS-CoV-2.

The necropsy sample in
collection and tracking,
necropsy photos.

General Information

- For any animal test
confirmatory testin
- This sample invento
guidance to individ
- The sample invento
forms utilized in cli
assessment of colle
- The sample invento
necropsies) or duri
- A complete necrop
complete postmor
and digestive syste
- The document can
photos of the check

Necropsy and Ancillary

- Safety of the collec
be donned prior to
protection (i.e. face
suitable alternative
protective equipme
https://www.cdc.g
https://www.cdc.g
Veterinary-specific

Animal Information

Animal ID:_____ Species: ☐ CN☐ FEL☐ BOV ☐ EQ☐ Other _____
Age____ Y M D Sex: M F MN FS Pregnant Breed (no abbreviations) _____
SARS-CoV-2 Status: ☐ ND ☐ Pending ☐Neg ☐Pos: ☐Presumptive ☐ Confirmed
Pos Samples: ☐ Fecal ☐ Oropharyngeal ☐Nasal ☐Blood Lab: _____

Lab Information

Necropsy Facility (Name, location): _____ Date of Necropsy Click or tap to enter a date.
Pathologist/Prosector: _____ Phone #:_____
E-mail: _____
Items sent: ☐Sample Inventory List ☐Necropsy Report ☐Medical Records/Summary ☐ Photos

Target Swabs and Priority Tissues

Tissue Sample	Sample Disposition	Sample Location/Comments
Oropharyngeal Swab and Histo (swab caudal to hard palate)	Swab: ☐U ☐BHI ☐PBS ☐Sa ☐Other ☐FO FR: ☐4 ☐-20 ☐ -80	
Nasal Swab/Nasa Mucosal (Histo)	Swab: ☐U ☐BHI ☐PBS ☐Sa ☐Other ☐FO FR: ☐4 ☐-20 ☐ -80	
Feces	Swab: ☐U ☐BHI ☐PBS ☐Sa ☐Other FR: ☐4 ☐-20 ☐ -80	
Tracheal Swab/trachea (Histo)	Swab: ☐U ☐BHI ☐PBS ☐Sa ☐Other ☐FO FR: ☐4 ☐-20 ☐ -80	
Bronchus ☐ L ☐R ☐ NOS	☐FO FR: ☐4 ☐-20 ☐ -80	
Lung ☐L ☐R ☐NOS	☐FO FR: ☐4 ☐-20 ☐ -80	
Tonsil (T)	☐FO FR: ☐4 ☐-20 ☐ -80	
Mediastinal Lymph Node (T)	☐FO FR: ☐4 ☐-20 ☐ -80	
Mesenteric Lymph Node (T)	☐FO FR: ☐4 ☐-20 ☐ -80	
Spleen	☐FO FR: ☐4 ☐-20 ☐ -80	
Heart	☐FO FR: ☐4 ☐-20 ☐ -80	
Liver	☐FO FR: ☐4 ☐-20 ☐ -80	
Kidney	☐FO FR: ☐4 ☐-20 ☐ -80	
Pancreas	☐FO FR: ☐4 ☐-20 ☐ -80	
Small Intestine (T with location)	☐FO FR: ☐4 ☐-20 ☐ -80	
Brain (freeze- cerebrum, cerebellum, brainstem)	☐FO FR: ☐4 ☐-20 ☐ -80	
Heart Blood (serum)	FR: ☐4 ☐-20 ☐ -80	

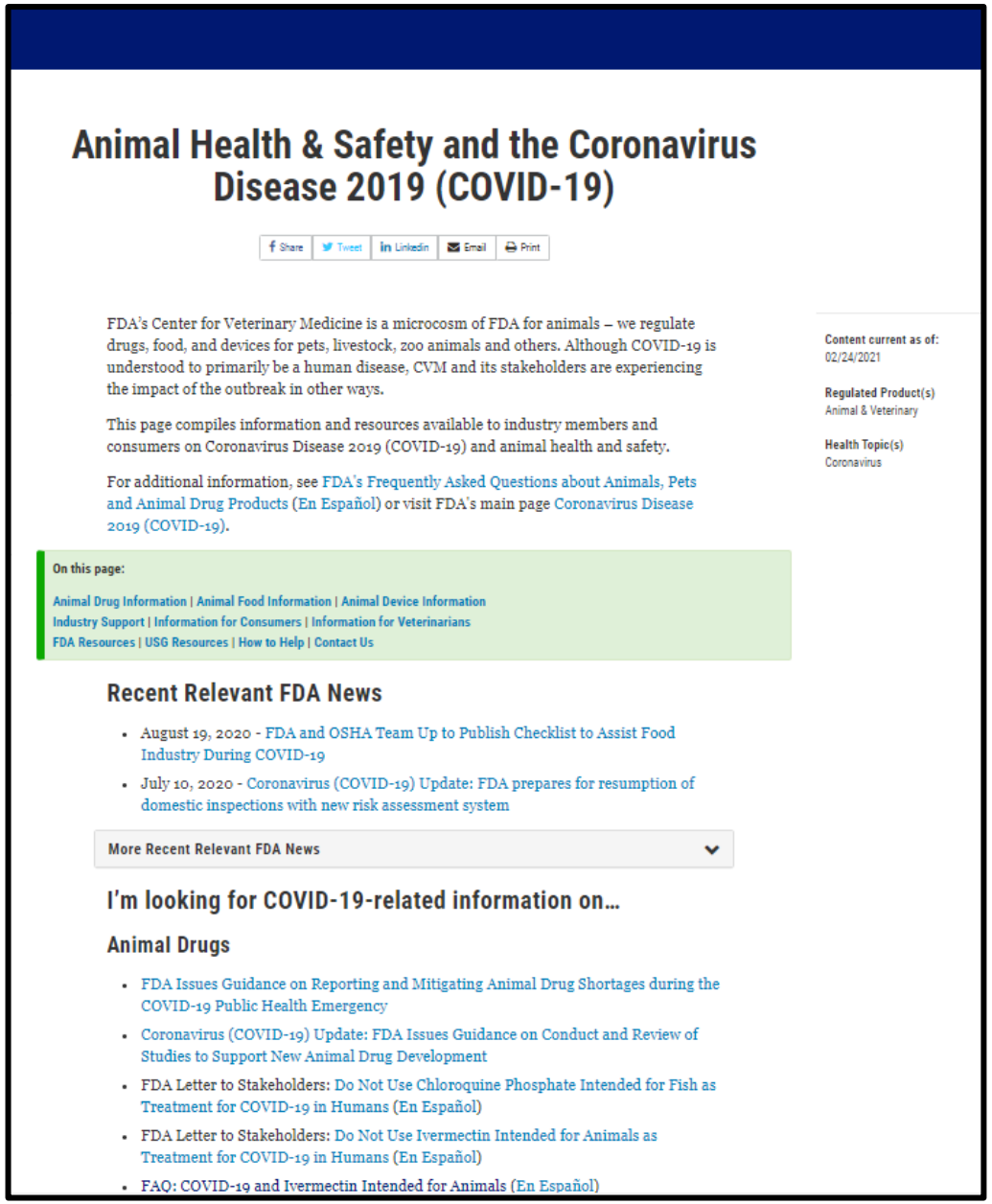
Non-Priority Tissues

FDA U.S. FOOD & DRUG ADMINISTRATION

Vet-LIRN

FDA CVM COVID-19 Response

- One Health Federal Interagency COVID-19 Coordination Group (OHFICC) and Subgroup
- Drug Shortages
- Animal Food Safety
- Fraudulent Products
  - FDA has not approved any drugs for the diagnosis, cure, mitigation, treatment, or prevention of COVID-19 in animals
  - Ivermectin FAQ and consumer update
- Animal Health & Safety and COVID-19
  - fda.gov/animal-veterinary/outbreaks-and-advisories/animal-health-safety-and-coronavirus-disease-2019-covid-19



Animal Health & Safety and the Coronavirus Disease 2019 (COVID-19)

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FDA's Center for Veterinary Medicine is a microcosm of FDA for animals – we regulate drugs, food, and devices for pets, livestock, zoo animals and others. Although COVID-19 is understood to primarily be a human disease, CVM and its stakeholders are experiencing the impact of the outbreak in other ways.

This page compiles information and resources available to industry members and consumers on Coronavirus Disease 2019 (COVID-19) and animal health and safety.

For additional information, see FDA's Frequently Asked Questions about Animals, Pets and Animal Drug Products (En Español) or visit FDA's main page Coronavirus Disease 2019 (COVID-19).

Content current as of: 02/24/2021

Regulated Product(s): Animal & Veterinary

Health Topic(s): Coronavirus

On this page:

Animal Drug Information | Animal Food Information | Animal Device Information
Industry Support | Information for Consumers | Information for Veterinarians
FDA Resources | USG Resources | How to Help | Contact Us

Recent Relevant FDA News

- August 19, 2020 - FDA and OSHA Team Up to Publish Checklist to Assist Food Industry During COVID-19
- July 10, 2020 - Coronavirus (COVID-19) Update: FDA prepares for resumption of domestic inspections with new risk assessment system

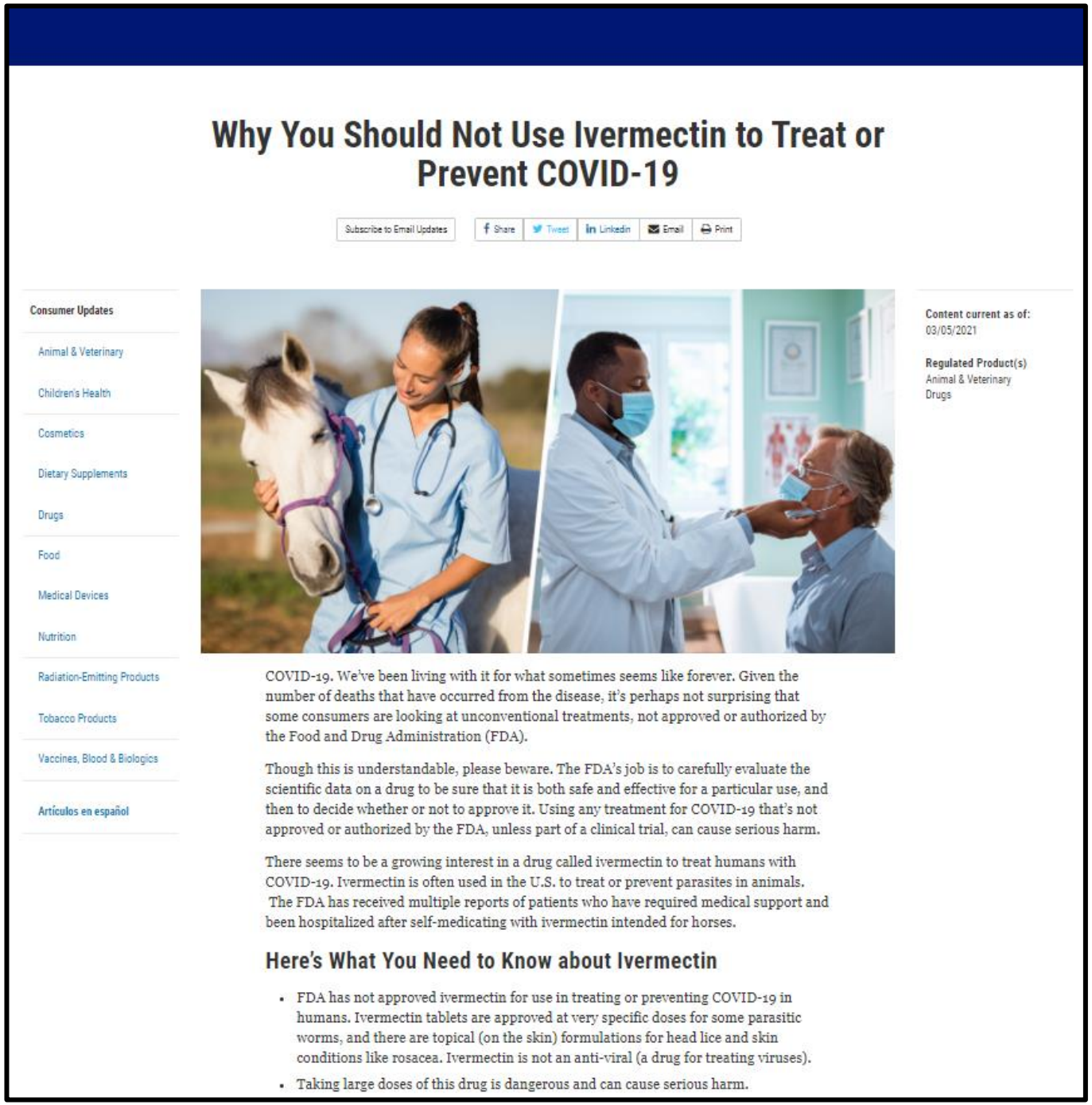
More Recent Relevant FDA News

I'm looking for COVID-19-related information on…

Animal Drugs

- FDA Issues Guidance on Reporting and Mitigating Animal Drug Shortages during the COVID-19 Public Health Emergency
- Coronavirus (COVID-19) Update: FDA Issues Guidance on Conduct and Review of Studies to Support New Animal Drug Development
- FDA Letter to Stakeholders: Do Not Use Chloroquine Phosphate Intended for Fish as Treatment for COVID-19 in Humans (En Español)
- FDA Letter to Stakeholders: Do Not Use Ivermectin Intended for Animals as Treatment for COVID-19 in Humans (En Español)
- FAQ: COVID-19 and Ivermectin Intended for Animals (En Español)

FDA U.S. FOOD & DRUG ADMINISTRATION



Why You Should Not Use Ivermectin to Treat or Prevent COVID-19

Subscribe to Email Updates | Share | Tweet | LinkedIn | Email | Print

Consumer Updates

- Animal & Veterinary
- Children's Health
- Cosmetics
- Dietary Supplements
- Drugs
- Food
- Medical Devices
- Nutrition
- Radiation-Emitting Products
- Tobacco Products
- Vaccines, Blood & Biologics

Artículos en español

Content current as of: 03/05/2021

Regulated Product(s)
Animal & Veterinary Drugs

COVID-19. We've been living with it for what sometimes seems like forever. Given the number of deaths that have occurred from the disease, it's perhaps not surprising that some consumers are looking at unconventional treatments, not approved or authorized by the Food and Drug Administration (FDA).

Though this is understandable, please beware. The FDA's job is to carefully evaluate the scientific data on a drug to be sure that it is both safe and effective for a particular use, and then to decide whether or not to approve it. Using any treatment for COVID-19 that's not approved or authorized by the FDA, unless part of a clinical trial, can cause serious harm.

There seems to be a growing interest in a drug called ivermectin to treat humans with COVID-19. Ivermectin is often used in the U.S. to treat or prevent parasites in animals. The FDA has received multiple reports of patients who have required medical support and been hospitalized after self-medicating with ivermectin intended for horses.

Here's What You Need to Know about Ivermectin

- FDA has not approved ivermectin for use in treating or preventing COVID-19 in humans. Ivermectin tablets are approved at very specific doses for some parasitic worms, and there are topical (on the skin) formulations for head lice and skin conditions like rosacea. Ivermectin is not an anti-viral (a drug for treating viruses).
- Taking large doses of this drug is dangerous and can cause serious harm.

- ***NEW*** **Why You Should Not Use Ivermectin to Treat or Prevent COVID-19**
- https://www.fda.gov/consumers/consumer-updates/why-you-should-not-use-ivermectin-treat-or-prevent-covid-19

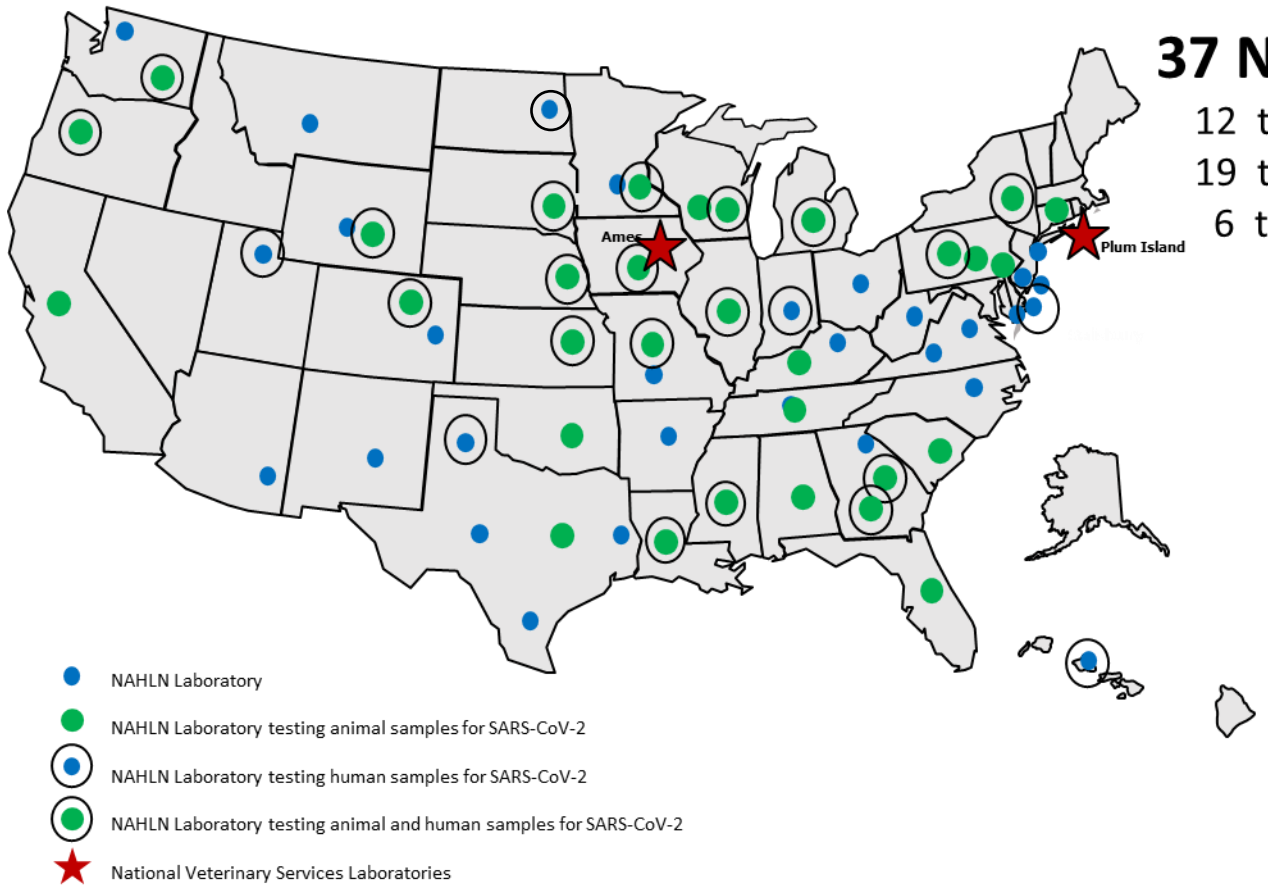
- **Ivermectin FAQ:**
- https://www.fda.gov/animal-veterinary/product-safety-information/faq-covid-19-and-ivermectin-intended-animals

Is there a vaccine to protect animals from SARS-CoV-2?

- **FDA has not approved any drugs for the diagnosis, cure, mitigation, treatment, or prevention of COVID-19 in animals**
- U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) Center for Veterinary Biologics (CVB) regulates veterinary biologics, including vaccines, diagnostic kits, and other products of biological origin
  - **APHIS CVB has not licensed any products to diagnose, treat, or prevent COVID-19 in animals**

fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-frequently-asked-questions#animals

NAHLN Response to COVID-19
Part of a One Health Approach



37 NAHLN Laboratories test for SARS-CoV-2

12 testing Animal samples only
19 testing Animal and Human samples
6 testing Human samples only*

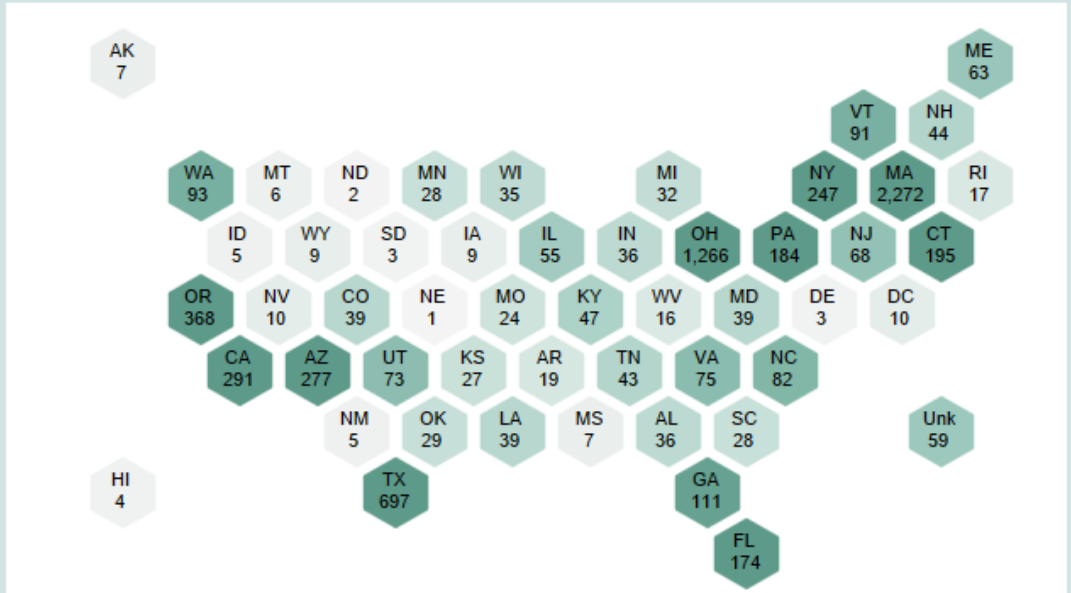
* Approx. 2.3M Human sample tests performed

Animals Tested for SARS-CoV-2

Lab tests performed on or before Thursday, April 15, 2021

Choose the data to show in the map: Total Tested

Number of Total Tested Animals by State



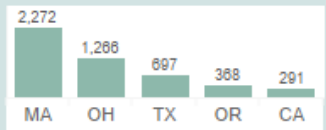
Confirmed Positive Non-farmed Animals	Confirmed Positive Mink Farms	Presumptive Animals
172	16	13

Testing Labs

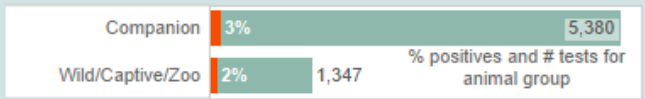
	Number of unique labs	Animal Count	% Animal Count
NAHLN and NVSL Labs	29	2,008	27.1%
Private Labs	4	1,325	17.9%
Other Labs	5	4,066	55.0%
Total	38	7,399	100.0%

Notes: Presumptive positive cases have tested positive at a NAHLN, private, or other lab but have not been confirmed by NVSL testing. Mink are tested individually but are reported as positive by premises. The total number of tested mink premises is not available. Some of the tests do not have an animal group and therefore are excluded from the animal group and species totals and percentages.

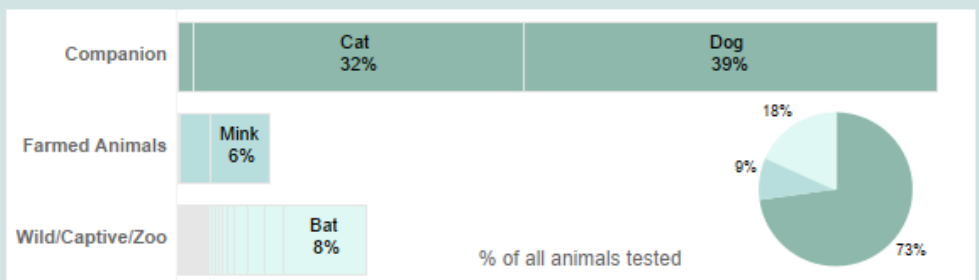
Top Testing States



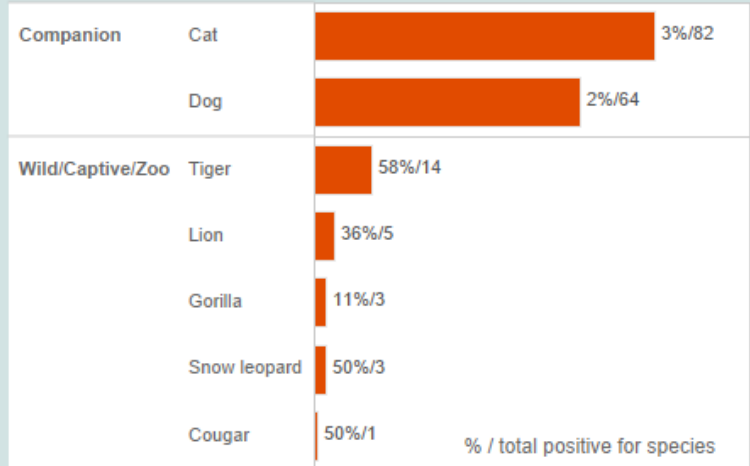
Confirmed Positives: % by Animal Groups



Tested Animals: % of Total



Confirmed Positives: % by Species



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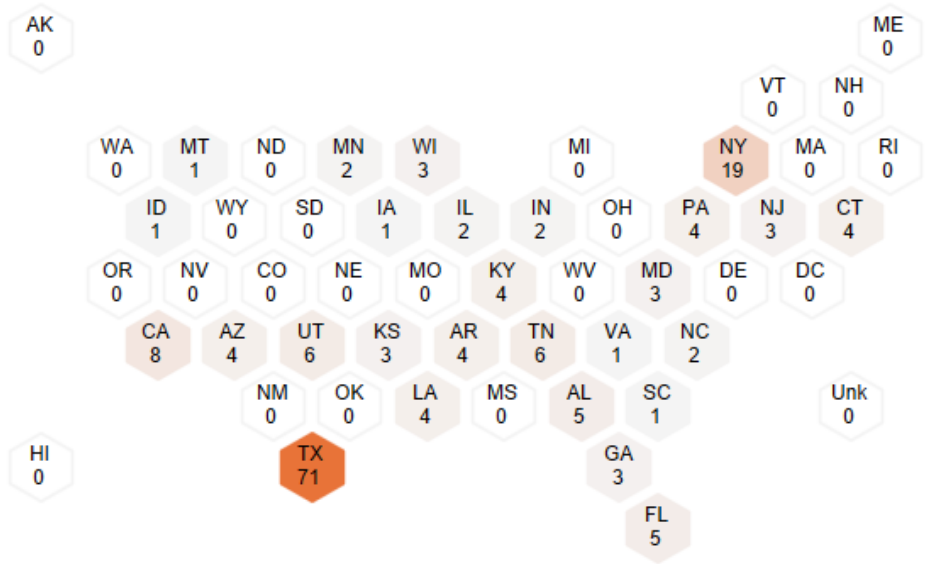

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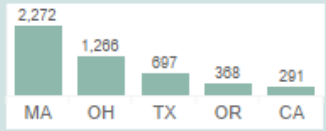
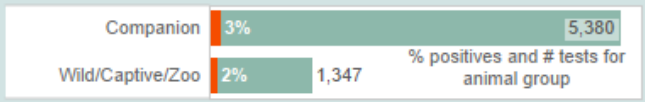
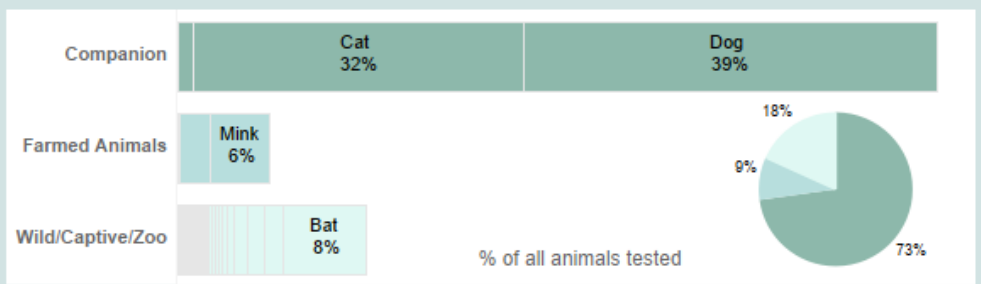


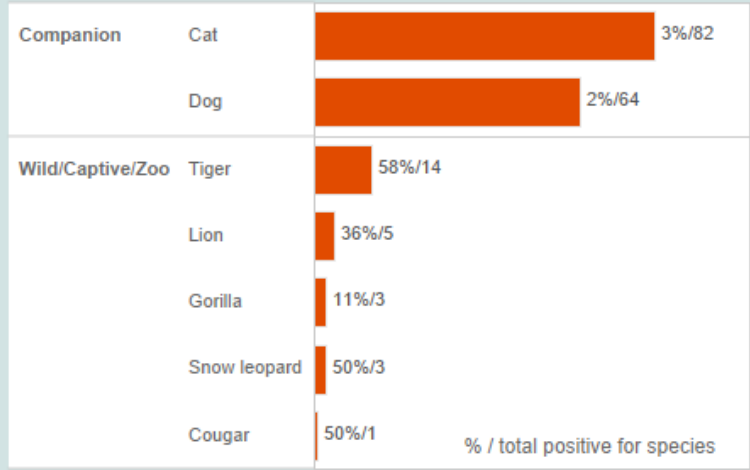
Confirmed Positives: % by Animal Groups



Tested Animals: % of Total



Confirmed Positives: % by Species



NEW! SARS-CoV-2: Updated Testing Strategies and Reporting Expectations for Companion Animal Samples

- New testing requirements at the National Veterinary Services Laboratories (NVSL):
  - **Confirmatory testing at NVSL for a dog or a cat is not required if that same species from the same state has been confirmed at NVSL.**
- Still required or recommended:
  - Confirmatory testing at NVSL
    - **First dog or cat from a state**
    - **All other species with exception of only index mink on every farm**
  - Serology:
    - NVSL recommends confirmatory testing if virus/serum neutralization methods were not used.
  - Sequencing:
    - Please submit all presumptive companion animal cases with **Cts of 30 or less** for whole genome sequencing at no cost to monitor the SARS-CoV-2 viruses for mutations.

NEW! SARS-CoV-2: Updated Testing Strategies and Reporting Expectations for Companion Animal Samples

USDA strongly recommends:

<u>All</u> presumptive positive animal cases should be immediately reported immediately to the State animal health officials and the State public health veterinarians so that appropriate investigations may be conducted.

Wildlife and Zoo Animals Subgroup Updates

Companion Animals
(Working Animals)

CDC

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

Production Animals
(previously Livestock)

USDA-APHIS

Environmental Health

ATSDR, CDC

SARS-CoV-2 in Big Cats in Sanctuaries: Webinar

TOPICS:

- Overview of the One Health Federal Interagency Coordination Group
- SARS-CoV-2 history, events, and clinical signs in big cats
- Worker **safety and occupational health**
- **Using the Hierarchy** of Controls approach to mitigate risks
- Importance of disease reporting and investigation
- Sample collection, testing, and diagnostics

Wildlife Guidance Website

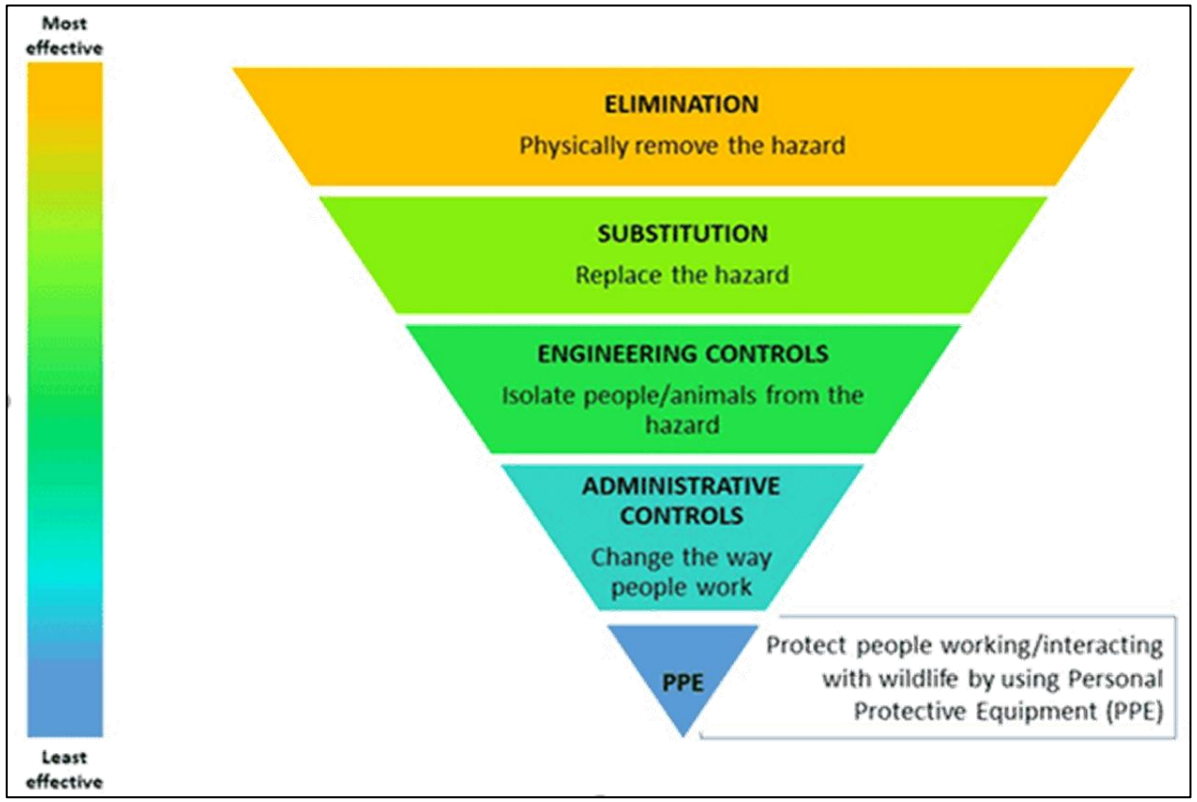
On This Page

Wildlife Guidance Website

Reducing the Risk of SARS-CoV-2 Between People and Wildlife

https://www.cdc.gov/coronavirus/2019-ncov/your-health/wildlife.html

Using the Hierarchy of Controls to Develop Risk Mitigation Measures



Production Animals Subgroup

Companion Animals
(Working Animals)

CDC

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

DOI USGS

Production Animals
(previously Livestock)

USDA

CDC FDA NIH

Environmental Health

ATSDR, CDC

Research and Science Updates

- Experimental SARS-CoV-2 Infection of Bank Voles – Ulrich et al. 2021, *Emerging Infectious Diseases*
- Experimental susceptibility of North American raccoons (*Procyon lotor*) and striped skunks (*Mephitis mephitis*) to SARS-CoV-2 – Francisco et al. 2021, *bioRxiv (preprint)*
- Myocarditis in naturally infected pets with the British variant of COVID-19 – Ferasin et al. 2021, *bioRxiv (preprint)*
- The B1.351 and P.1 variants extend SARS-CoV-2 host range to mice – Montagutelli et al. 2021, *bioRxiv (preprint)*
- One Health Investigation of SARS-CoV-2 Infection and Seropositivity among Pets in Households with Confirmed Human COVID-19 Cases - Utah and Wisconsin, 2020 – Goryoka et al. 2021, *bioRxiv (preprint)*
- SARS-CoV-2 B.1.1.7 variant of concern detected in a pet dog and cat after exposure to a person with COVID-19, USA – Hamer et al. 2021, *Research Square (preprint)*

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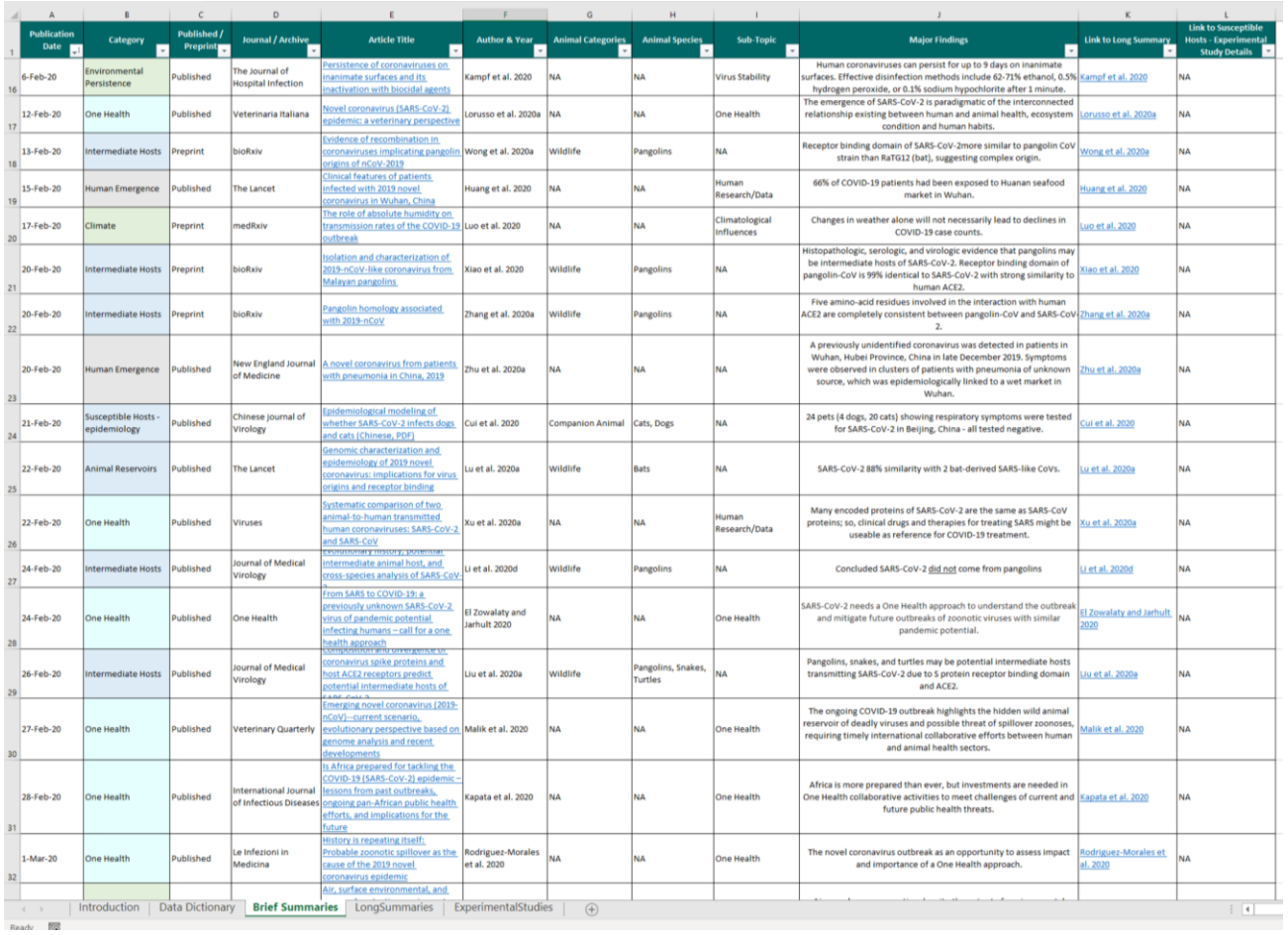

Publication Date	Category	Published / Preprint	Journal / Archive	Article Title	Author & Year	Animal Categories	Animal Species	Sub-Topic	Major Findings	Link to Long Summary	Link to Susceptible Hosts - Experimental Study Details
6-Feb-20	Environmental Persistence	Published	The Journal of Hospital Infection	Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents	Kampf et al. 2020	NA	NA	Virus Stability	Human coronaviruses can persist for up to 9 days on inanimate surfaces. Effective disinfection methods include 62-71% ethanol, 0.5% hydrogen peroxide, or 0.1% sodium hypochlorite after 1 minute.	Kampf et al. 2020	NA
12-Feb-20	One Health	Published	Veterinaria Italiana	Novel coronavirus (SARS-CoV-2) epidemic: a veterinary perspective	Lorusso et al. 2020a	NA	NA	One Health	The emergence of SARS-CoV-2 is paradigmatic of the interconnected relationship existing between human and animal health, ecosystem condition and human habits.	Lorusso et al. 2020a	NA
13-Feb-20	Intermediate Hosts	Preprint	bioRxiv	Evidence of recombination in coronaviruses implicating pangolin origins of nCoV-2019	Wong et al. 2020a	Wildlife	Pangolins	NA	Receptor binding domain of SARS-CoV-2more similar to pangolin CoV strain than RaTG12 (bat), suggesting complex origin.	Wong et al. 2020a	NA
15-Feb-20	Human Emergence	Published	The Lancet	Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China	Huang et al. 2020	NA	NA	Human Research/Data	66% of COVID-19 patients had been exposed to Huanan seafood market in Wuhan.	Huang et al. 2020	NA
17-Feb-20	Climate	Preprint	medRxiv	The role of absolute humidity on transmission rates of the COVID-19 outbreak	Luo et al. 2020	NA	NA	Climatological Influences	Changes in weather alone will not necessarily lead to declines in COVID-19 case counts.	Luo et al. 2020	NA
20-Feb-20	Intermediate Hosts	Preprint	bioRxiv	Isolation and characterization of 2019-nCoV-like coronavirus from Malayan pangolins	Xiao et al. 2020	Wildlife	Pangolins	NA	Histopathologic, serologic, and virologic evidence that pangolins may be intermediate hosts of SARS-CoV-2. Receptor binding domain of pangolin-CoV is 99% identical to SARS-CoV-2 with strong similarity to human ACE2.	Xiao et al. 2020	NA
20-Feb-20	Intermediate Hosts	Preprint	bioRxiv	Pangolin homology associated with 2019-nCoV	Zhang et al. 2020a	Wildlife	Pangolins	NA	Five amino-acid residues involved in the interaction with human ACE2 are completely consistent between pangolin-CoV and SARS-CoV-2.	Zhang et al. 2020a	NA
20-Feb-20	Human Emergence	Published	New England Journal of Medicine	A novel coronavirus from patients with pneumonia in China, 2019	Zhu et al. 2020a	NA	NA	NA	A previously unidentified coronavirus was detected in patients in Wuhan, Hubei Province, China in late December 2019. Symptoms were observed in clusters of patients with pneumonia of unknown source, which was epidemiologically linked to a wet market in Wuhan.	Zhu et al. 2020a	NA
21-Feb-20	Susceptible Hosts - epidemiology	Published	Chinese journal of Virology	Epidemiological modeling of whether SARS-CoV-2 infects dogs and cats (Chinese, PDF)	Cui et al. 2020	Companion Animal	Cats, Dogs	NA	24 pets (4 dogs, 20 cats) showing respiratory symptoms were tested for SARS-CoV-2 in Beijing, China - all tested negative.	Cui et al. 2020	NA
22-Feb-20	Animal Reservoirs	Published	The Lancet	Genomic characterization and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding	Lu et al. 2020a	Wildlife	Bats	NA	SARS-CoV-2 88% similarity with 2 bat-derived SARS-like CoVs.	Lu et al. 2020a	NA
22-Feb-20	One Health	Published	Viruses	Systematic comparison of two animal-to-human transmitted human coronaviruses: SARS-CoV-2 and SARS-CoV	Xu et al. 2020a	NA	NA	Human Research/Data	Many encoded proteins of SARS-CoV-2 are the same as SARS-CoV proteins; so, clinical drugs and therapies for treating SARS might be useable as reference for COVID-19 treatment.	Xu et al. 2020a	NA
24-Feb-20	Intermediate Hosts	Published	Journal of Medical Virology	Evolutionary history, potential intermediate animal host, and cross-species analysis of SARS-CoV-	Li et al. 2020d	Wildlife	Pangolins	NA	Concluded SARS-CoV-2 did not come from pangolins	Li et al. 2020d	NA
24-Feb-20	One Health	Published	One Health	From SARS to COVID-19: a previously unknown SARS-CoV-2 virus of pandemic potential infecting humans – call for a one health approach	El Zowalaty and Jarhult 2020	NA	NA	One Health	SARS-CoV-2 needs a One Health approach to understand the outbreak and mitigate future outbreaks of zoonotic viruses with similar pandemic potential.	El Zowalaty and Jarhult 2020	NA
26-Feb-20	Intermediate Hosts	Published	Journal of Medical Virology	Comparison and evidence of coronavirus spike proteins and host ACE2 receptors predict potential intermediate hosts of	Liu et al. 2020a	Wildlife	Pangolins, Snakes, Turtles	NA	Pangolins, snakes, and turtles may be potential intermediate hosts transmitting SARS-CoV-2 due to S protein receptor binding domain and ACE2.	Liu et al. 2020a	NA
27-Feb-20	One Health	Published	Veterinary Quarterly	Emerging novel coronavirus (2019-nCoV)--current scenario, evolutionary perspective based on genome analysis and recent developments	Malik et al. 2020	NA	NA	One Health	The ongoing COVID-19 outbreak highlights the hidden wild animal reservoir of deadly viruses and possible threat of spillover zoonoses, requiring timely international collaborative efforts between human and animal health sectors.	Malik et al. 2020	NA
28-Feb-20	One Health	Published	International Journal of Infectious Diseases	Is Africa prepared for tackling the COVID-19 (SARS-CoV-2) epidemic – lessons from past outbreaks, ongoing pan-African public health efforts, and implications for the future	Kapata et al. 2020	NA	NA	One Health	Africa is more prepared than ever, but investments are needed in One Health collaborative activities to meet challenges of current and future public health threats.	Kapata et al. 2020	NA
1-Mar-20	One Health	Published	Le Infezioni in Medicina	History is repeating itself: Probable zoonotic spillover as the cause of the 2019 novel coronavirus epidemic	Rodriguez-Morales et al. 2020	NA	NA	One Health	The novel coronavirus outbreak as an opportunity to assess impact and importance of a One Health approach.	Rodriguez-Morales et al. 2020	NA
				Air, surface environmental, and							

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ONE HEALTH

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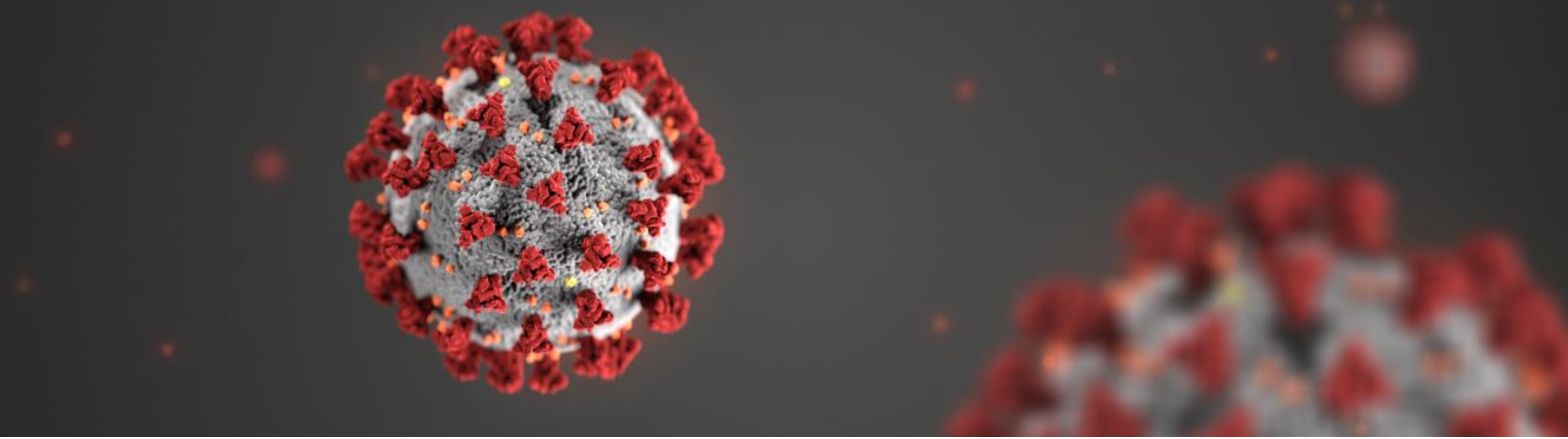
Future One Health Partners Monthly COVID-19 Webinars

- Third Tuesday of the month
- Next call:

  Tuesday, May 18, 2021, 2:00 pm ET

  If others are interested in being invited to this recurring call, please direct them to onehealth@cdc.gov



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